



# 2020 CEFOR HULL FLEET AND CASUALTY TRENDS

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- Focus of 2020 data analysis: Covid-19 and what else?
- Warm-up: Examples of Covid-19 impact
- The Context: Global trade & shipping

## NoMIS hull trends

- **Nordic Marine Insurance Statistics (NoMIS): Data & Team**
- Fleet & Vessel value trends
- Casualty trends – partial, major and total losses
  - Breakdown by type of casualty
  - Claims frequency
  - Claims cost
  - By vessel segments
- Claims frequency versus vessel speed
- Fires – No all-clear signal

## FOCUS OF 2020 ANALYSIS

### **Covid-19: Identify impact on hull trends**

- Changes in global trade & shipping
- Vessel activity (Mileage, Speed)
- Vessel segments – reacted differently
- Effects on portfolio (vessel values) & casualty trends

### **And what else?**

# INDUSTRY ISSUES



High-value risks



Human factor/  
Crew qualification



«IMO 2020»: Emission reduction

Fuel quality & price, oil price

Sustainability goals

Changes in regulation (liabilities)

Climate change/  
Increase in Nat-cat



Fires (RoRo & Container vessels)

Value accumulation (in ports and on vessels)

Cyber risk

Geopolitical tensions/sanctions

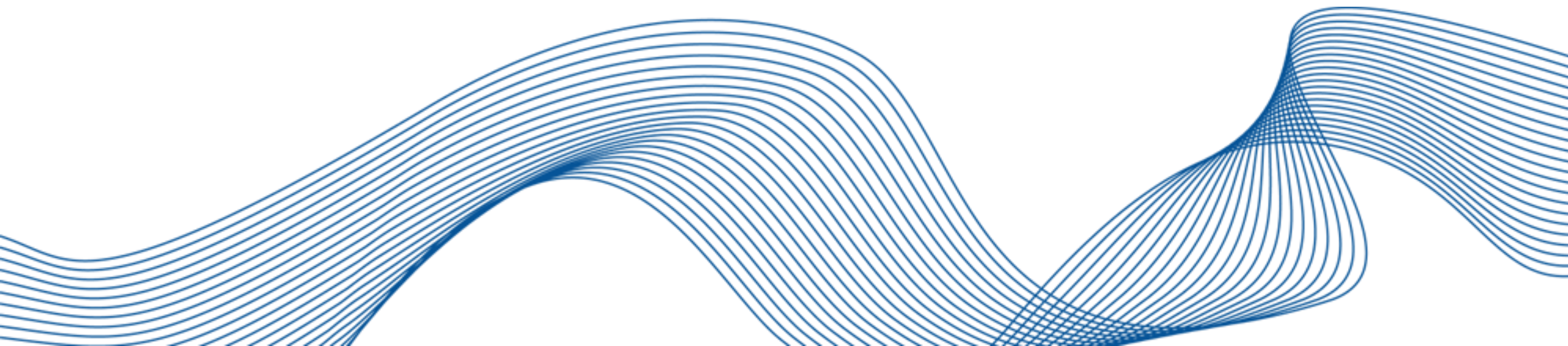
Arctic risks

New/complex technology

Navigation



# WARM-UP: EXAMPLES OF COVID-19 IMPACT



# JANUARY 2021, OSLO: COLOR FANTASY AT VIPPETANGEN



Should be sailing  
Oslo-Kiel daily.

Photo: Astrid Seltmann

# APRIL 2020: CRUISE VESSEL ACCUMULATION GULF OF MEXICO

- Gulf of Mexico was home to 5 busiest cruise ship ports in 2019
- Many cruise vessels 'warm-stacked' with only minimum crew -> reduced capability to react to e.g. storm warnings;
- Insurance perspective: High value accumulation in certain geographic areas.



# CREW CHANGE CHALLENGE – CLOSED BOARDERS, QUARANTINE, CANCELLED FLIGHTS



Photo: Astrid Seltmann

Seafarers stayed longer on board – psychological strain, fatigue, ensuing safety risks.

← Secret crew change in covid-19 times?



# REPAIRS MAY GET DELAYED



Photo: Astrid Seltmann

Border closings and disturbed global trade may delay delivery of spare parts and availability of qualified employees at shipyards.

# COVID-19 IMPACT ON MARINE INSURANCE (CEFOR)

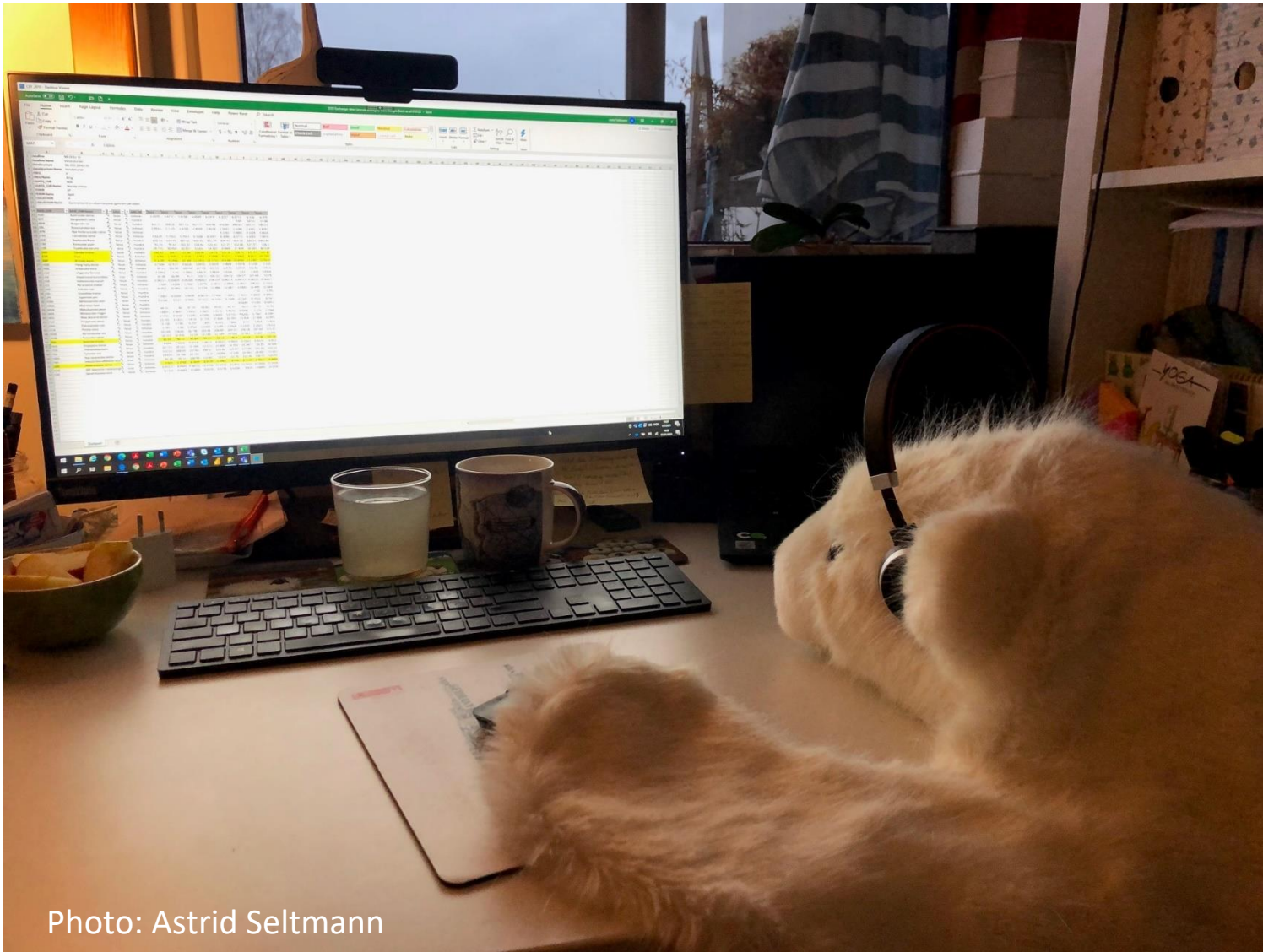


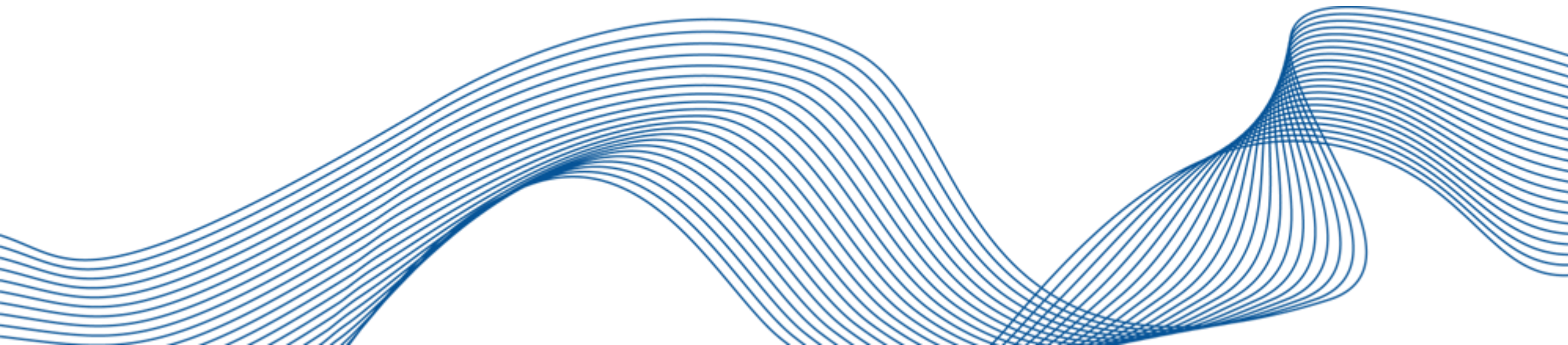
Photo: Astrid Seltmann

Astrid working from home since March 2020.

Home Office assistant hired from Svalbard.

He was unemployed due to missing tourists and looking for new challenges.

# THE CONTEXT: GLOBAL TRADE & SHIPPING

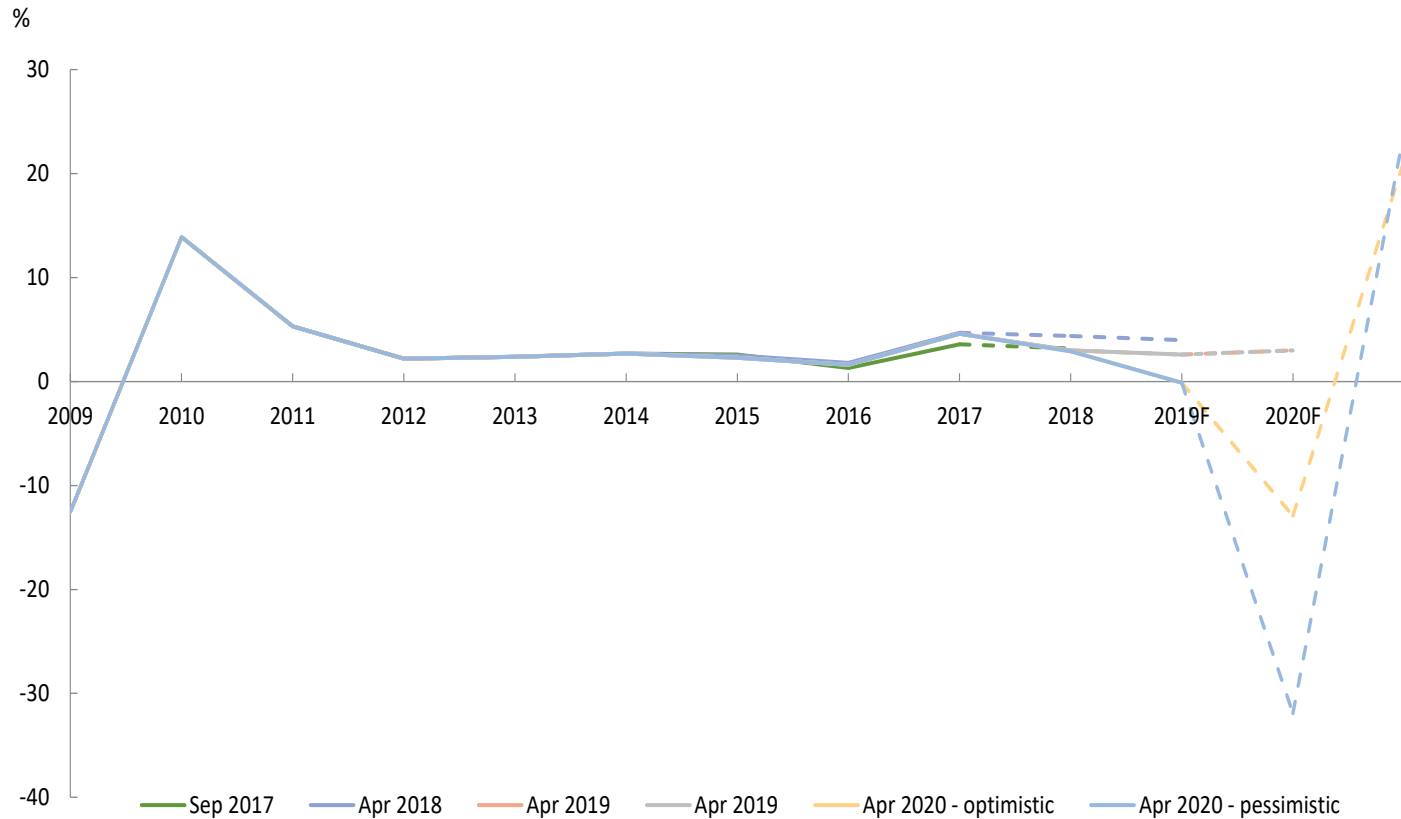


# THE GLOBAL CONTEXT

	Characteristics	Relevance for Marine Insurance
Global Trade	Global economy, commodity prices, freight rates, oil price,...	Volume/Value of transported goods (cargo) create demand for shipping.
World Fleet	Shipbuilding & scrapping react to global economy.	Size, value and composition of world fleet.
Crew	International crew	Qualification of crew relevant for loss prevention.
Weather/Climate	Frequency & intensity of storms, ice etc. Some areas more demanding (Wave heights, wind speed, Arctic, challenging shipping lanes,...)	Value accumulation in exposed areas (ports, large vessels) + increasing frequency/intensity of NatCat = Risk of new record losses. Increasing traffic in challenging areas (Arctic).
Legislation	International and national legislation	Can be complicated across countries, may influence claim cost.
Geopolitical risks	Challenging or forbidden areas (piracy, sanctions,...)	Risk to vessels and crew, difficult legal issues

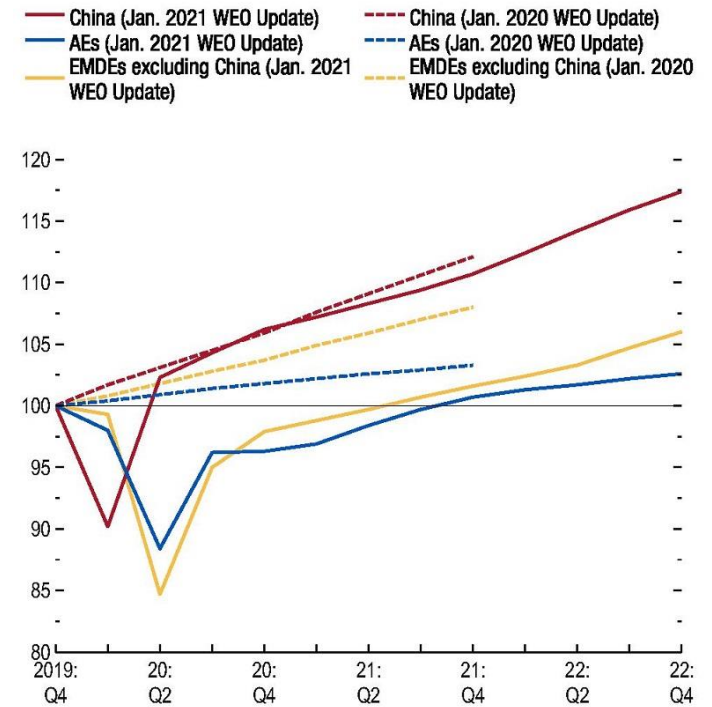
# WTO (WORLD TRADE ORGANIZATION) FORECASTS FOR GROWTH IN WORLD MERCHANDISE TRADE VOLUME

As of April 2020 – optimistic and pessimistic scenario projection:



As of January 2021:

Figure 1. Divergent Recoveries: WEO Forecast for Advanced Economies and Emerging Market and Developing Economies (Index, 2019:Q4 = 100)



Source: IMF staff estimates.

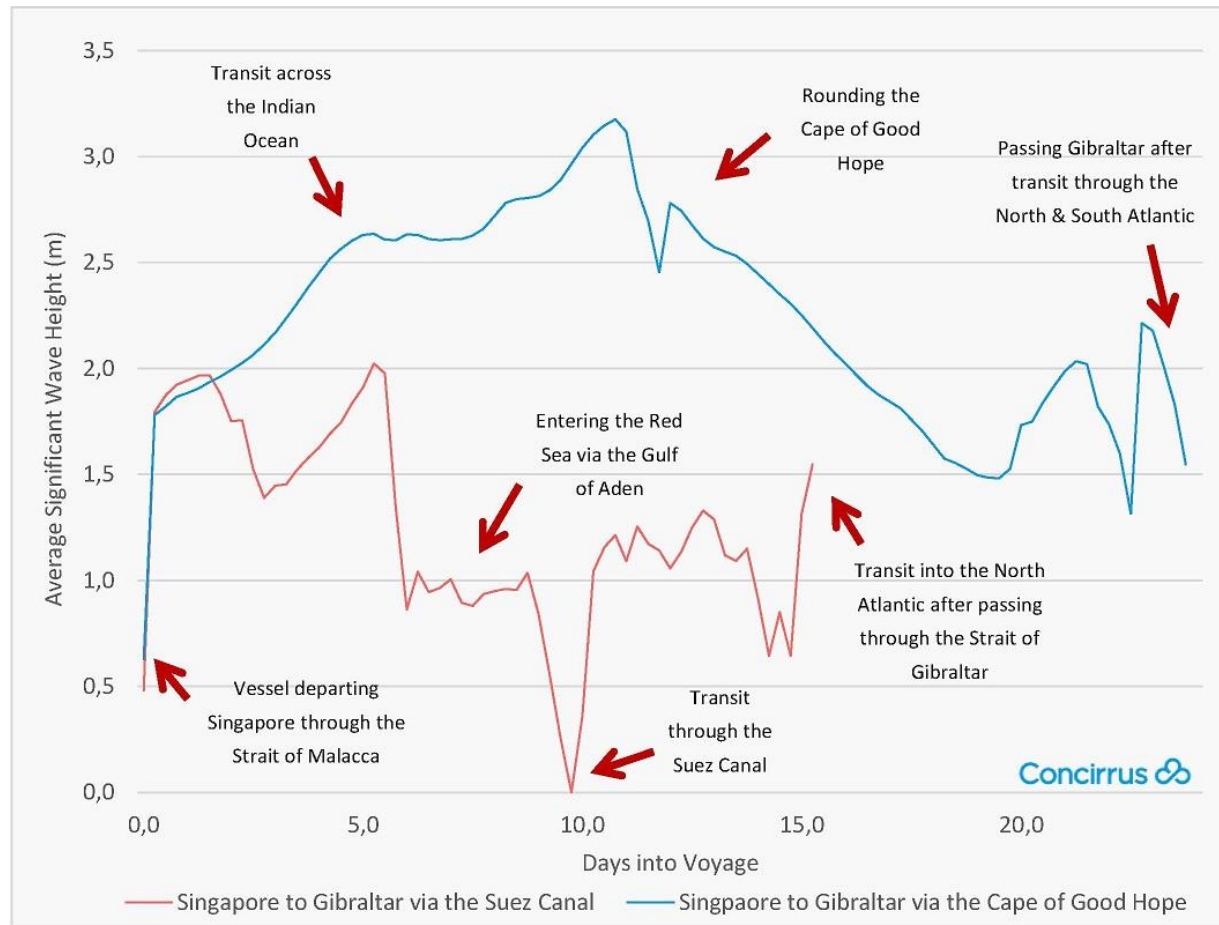
Note: AEs = advanced economies; EMDEs = emerging market and developing economies; WEO = World Economic Outlook.

# CHANGES IN CONTAINERSHIP TRADING PATTERNS IN 2020

Reduced fuel prices & more time because of reduction in trade but potentially increased weather risk exposure.

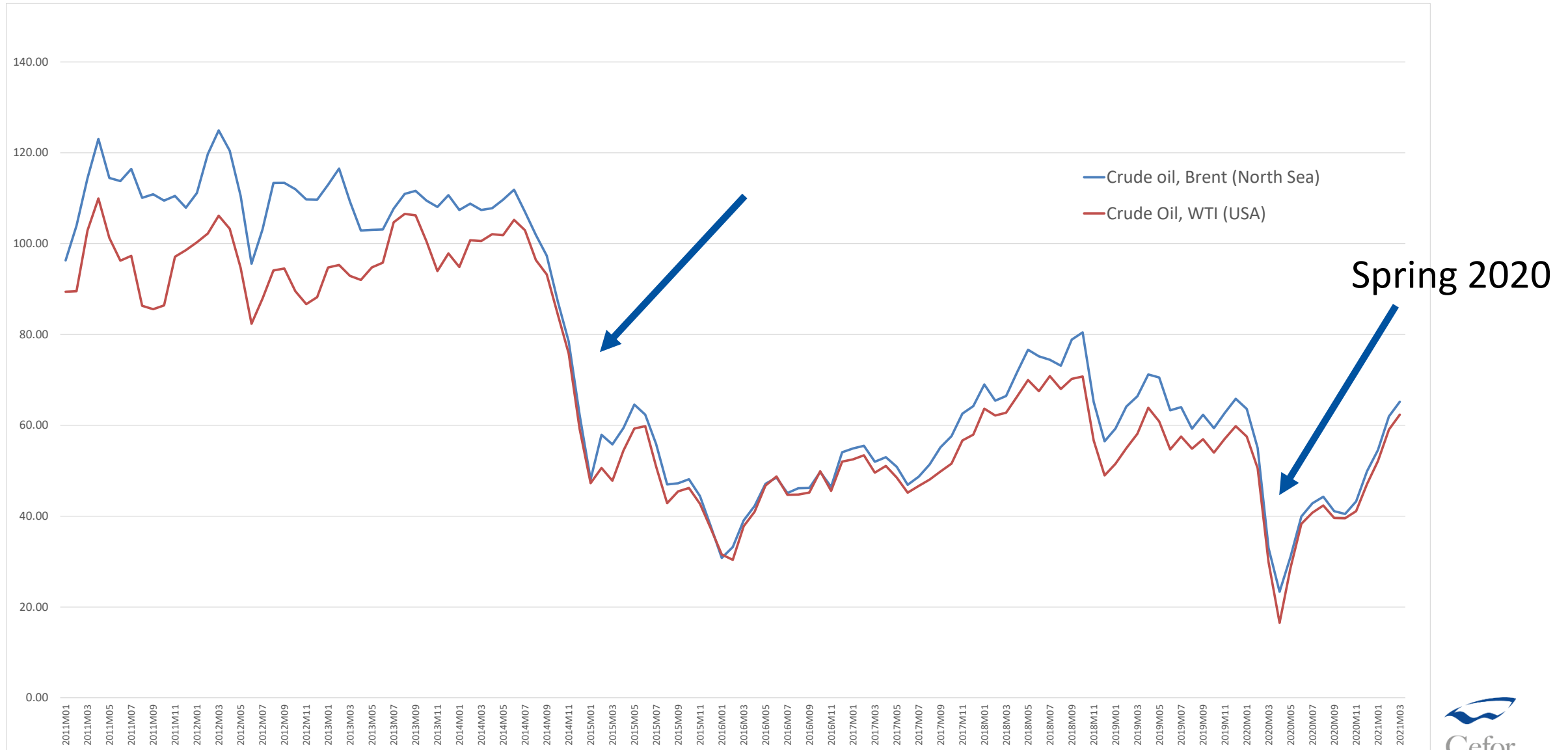
## Containership Routing

Environmental data from our data partner:  Your Experts in Weather Data Processing.



Source: Concirrus

# OIL PRICE PER MONTH (\$/BBL) – AT LOW LEVEL SINCE 2015



Source: World Bank - Commodity markets – ‘Pink Sheet’ data: <https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Historical-Data-Monthly.xlsx>



# INDUSTRY ENVIRONMENT 2020

What changed:

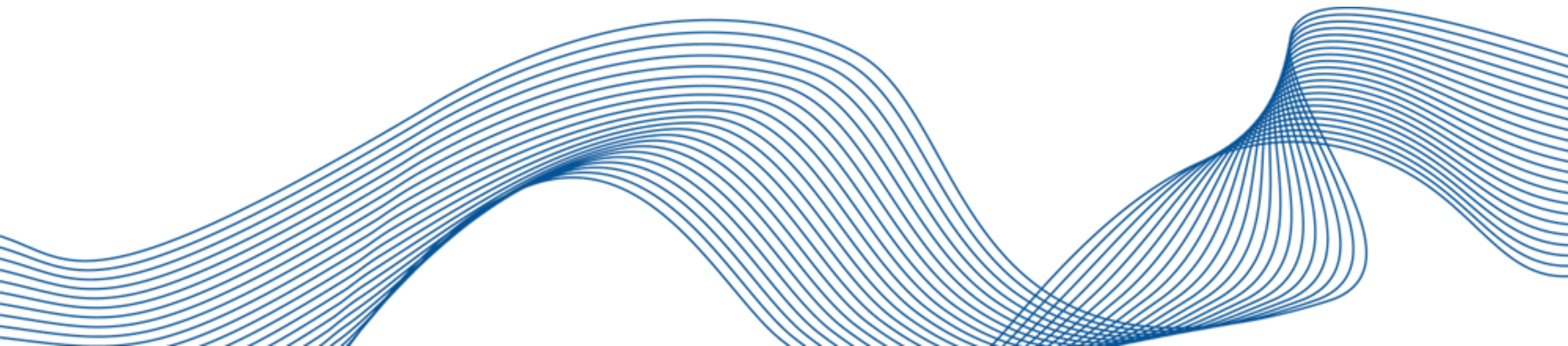
- Global trade (volume/values)
- Trading patterns / shipping routes
- Vessel activity (vessel segments reacted differently)
- Commodity prices
- Crew changes difficult / impossible
- Increased use of remote techniques (Surveys, class renewals, steering of maintenance, ... )
- Potential delay of repairs / maintenance / cargo
- Increased uncertainty in future projection of global economy

Remaining issues:

- Geopolitical tensions
- Sustainability focus: reduce emissions in shipping, contribute to support UN's environmental, social and governance (ESG) goals
- New technologies & fuel types, fires on board, climate/weather, seafarer qualification, ...
- Fires



**NORDIC MARINE INSURANCE STATISTICS (NOMIS)**  
**DATA & TEAM**



# NORDIC MARINE INSURANCE STATISTICS – THE DATA



## Nordic marine insurers report into the NoMIS database:

Quarterly updates

All vessels covered under **Hull & Machinery (H&M)** insurance

- Lead and follower business
- Underwriting years from 1995
- Portfolio and claims data (vessel values, deductibles, paid+outstanding claims development)
- For comparability, hull-related insurance types other than H&M are excluded, such as Loss of Hire, builder's risk, freight interest, fishing (catch&gear).



## Additional data:

World fleet details (subscription data), linked to insurance data via IMO number.

Exchange rates, oil price, ship operating costs, steel price etc.



## Data in this presentation represents:

**100% of each vessel** (values, claims).

Claims trends by **accident year** (= calendar year in which claims occurred)

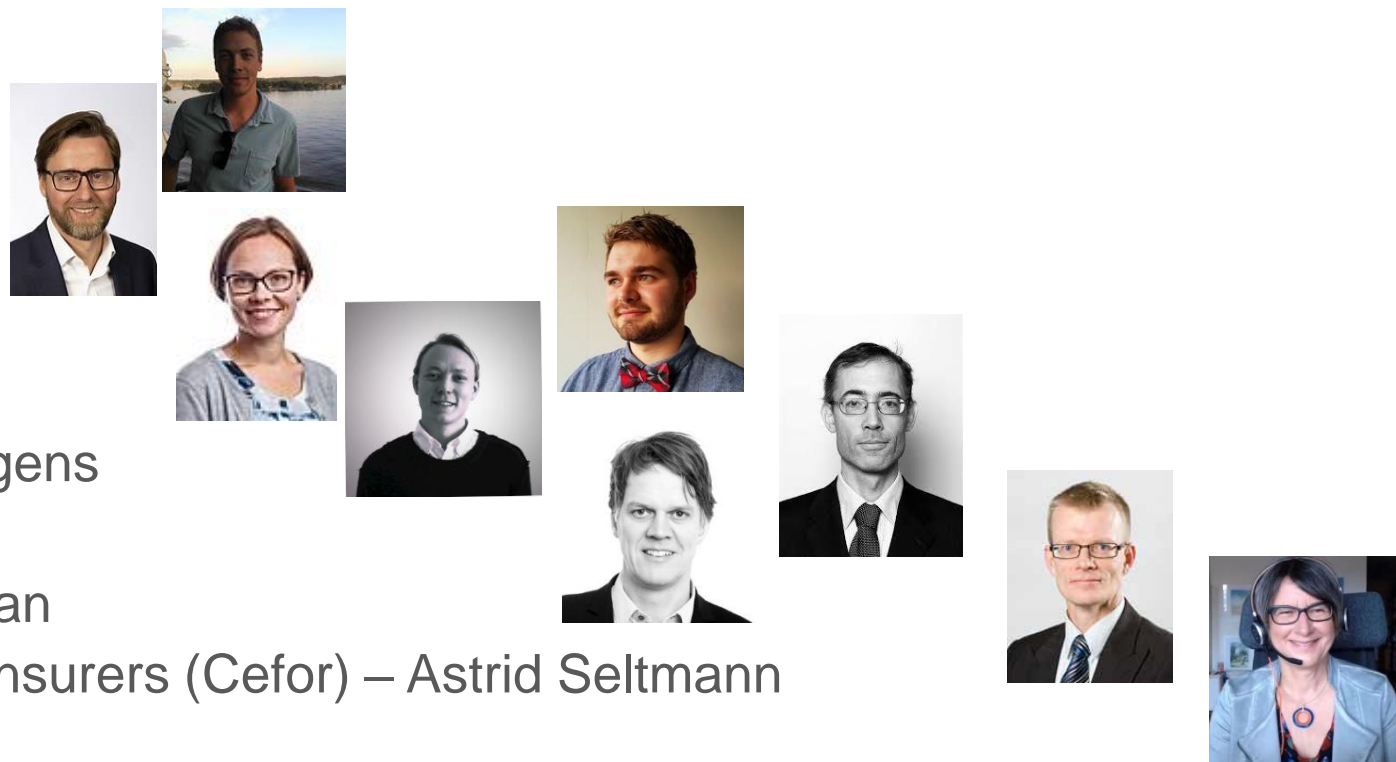
50% of world fleet > 10,000 gross tons (33% of total commercial world fleet)

Trends as of 31 December 2020.

# NORDIC MARINE INSURANCE STATISTICS – THE TEAM

The Cefor Statistics Forum dream team 2020:

- Alandia – Jonas Svartström
- Codan – Mikkel Gardner Andersen
- Gard – Kjersti Bruborg
- Gjensidige – Tobias Abrahamsen
- If – Oskar Tufvesson
- Norwegian Hull Club – Christian Irgens
- Skuld – Otto Rendedal
- The Swedish Club – Anders Hultman
- The Nordic Association of Marine Insurers (Cefor) – Astrid Seltmann



Combining the intellectual power of marine insurance analysts / actuaries / mathematicians / business intelligence director / insurance risk coordinator / underwriter.



# NOMIS DATA REPRESENTS 34% OF THE WORLD FLEET\* >1000 GT (~50% OF THE YOUNGEST AND LARGEST VESSELS)

Year of build	Gross tonnage				Grand Total
	1000-3999	4000-6999	7000-10000	>10000	
<b>Cefor share</b>					
2015-2020	22.5%	26.5%	27.0%	48.6%	40.8%
2010-2014	28.3%	36.4%	36.1%	50.6%	43.4%
2005-2009	32.6%	39.3%	48.7%	61.8%	50.3%
2000-2004	31.8%	33.1%	33.7%	53.7%	44.5%
1995-1999	22.0%	19.6%	21.0%	28.3%	24.1%
1990-1994	12.3%	12.1%	18.5%	20.3%	14.2%
<1990 or unknown	4.8%	5.2%	6.1%	10.2%	5.5%
<b>World Fleet</b>					
2015-2020	1,756	735	512	6,440	9,443
2010-2014	3,040	1,251	710	8,316	13,317
2005-2009	3,076	1,244	1,159	6,067	11,546
2000-2004	1,551	622	344	3,317	5,834
1995-1999	1,642	805	338	1,872	4,657
1990-1994	1,811	546	233	597	3,187
<1990 or unknown	8,459	1,774	590	1,330	12,153
<b>Total Cefor share</b>	17.5%	23.8%	31.5%	48.9%	33.7%
<b>Total World Fleet</b>	21,335	6,977	3,886	27,939	60,137

\* Vessels with IMO number)

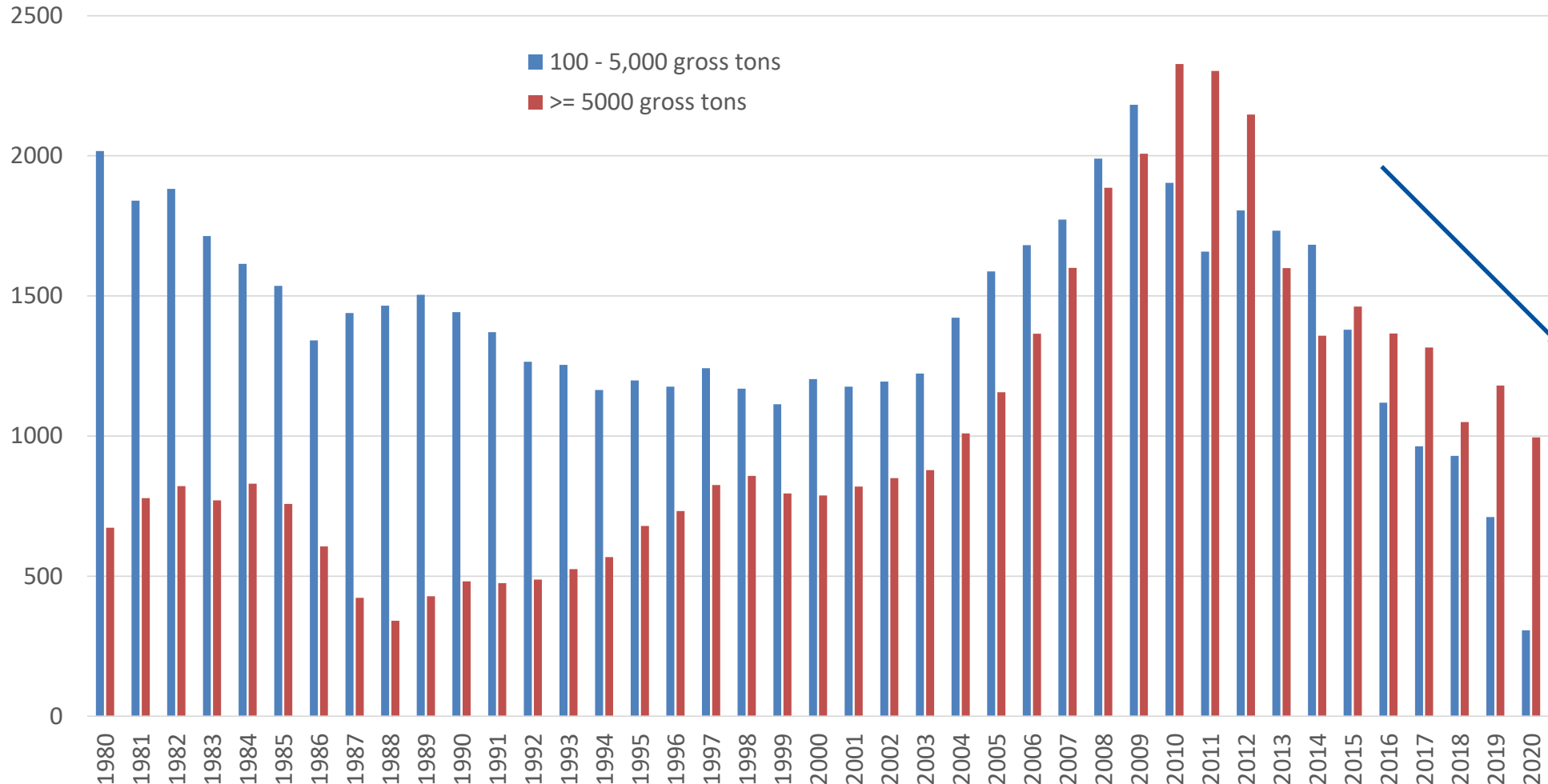
# FLEET & VESSEL VALUE TRENDS



Photo: Astrid Seltmann

# WORLD FLEET – LESS & LARGER NEWBUILDS

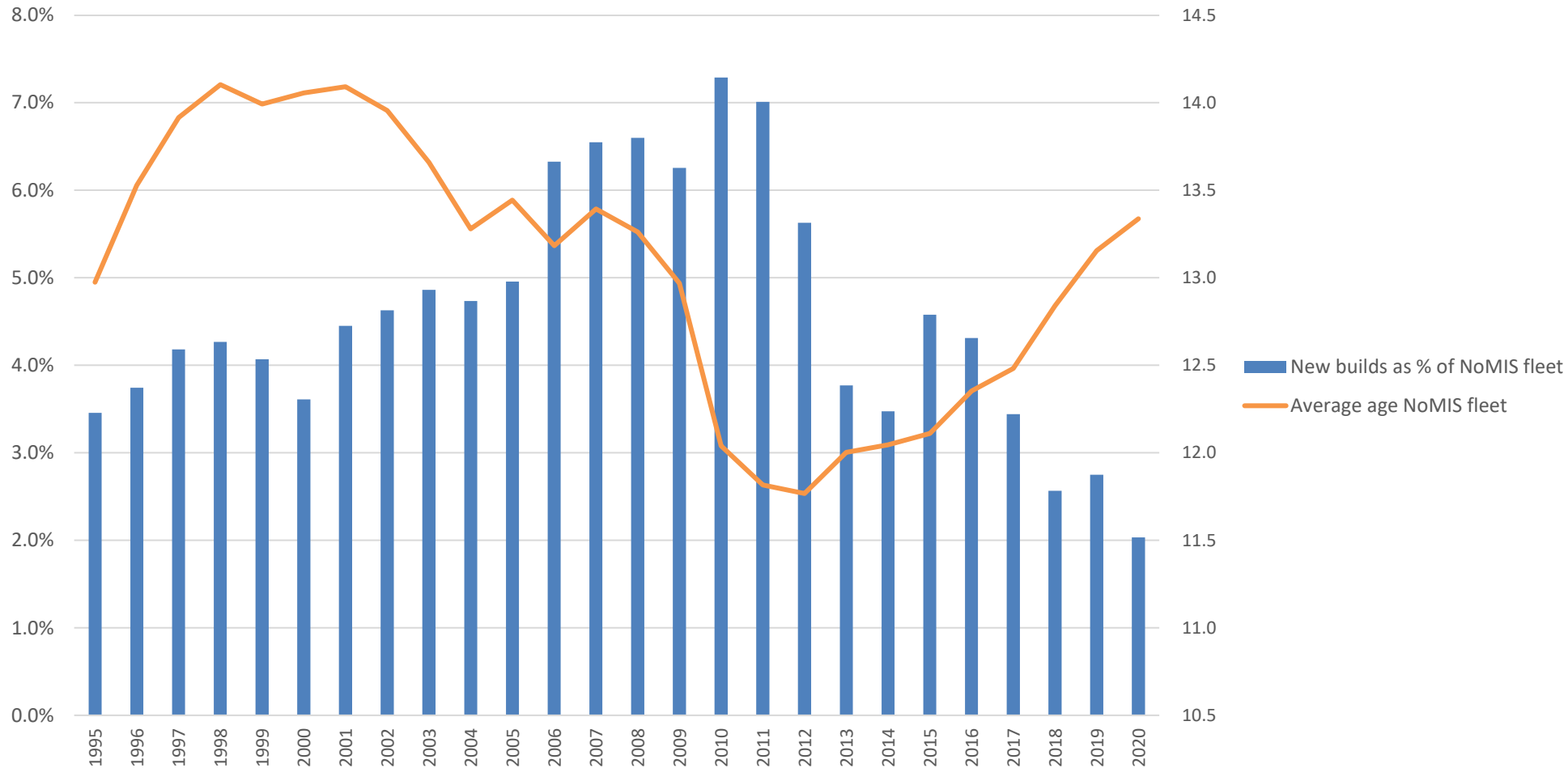
NUMBER OF NEWBUILDS PER YEAR LESS THAN AND ABOVE 5,000 GROSS TONS



After small uptick in 2019 for larger vessels continues reduction in 2020.

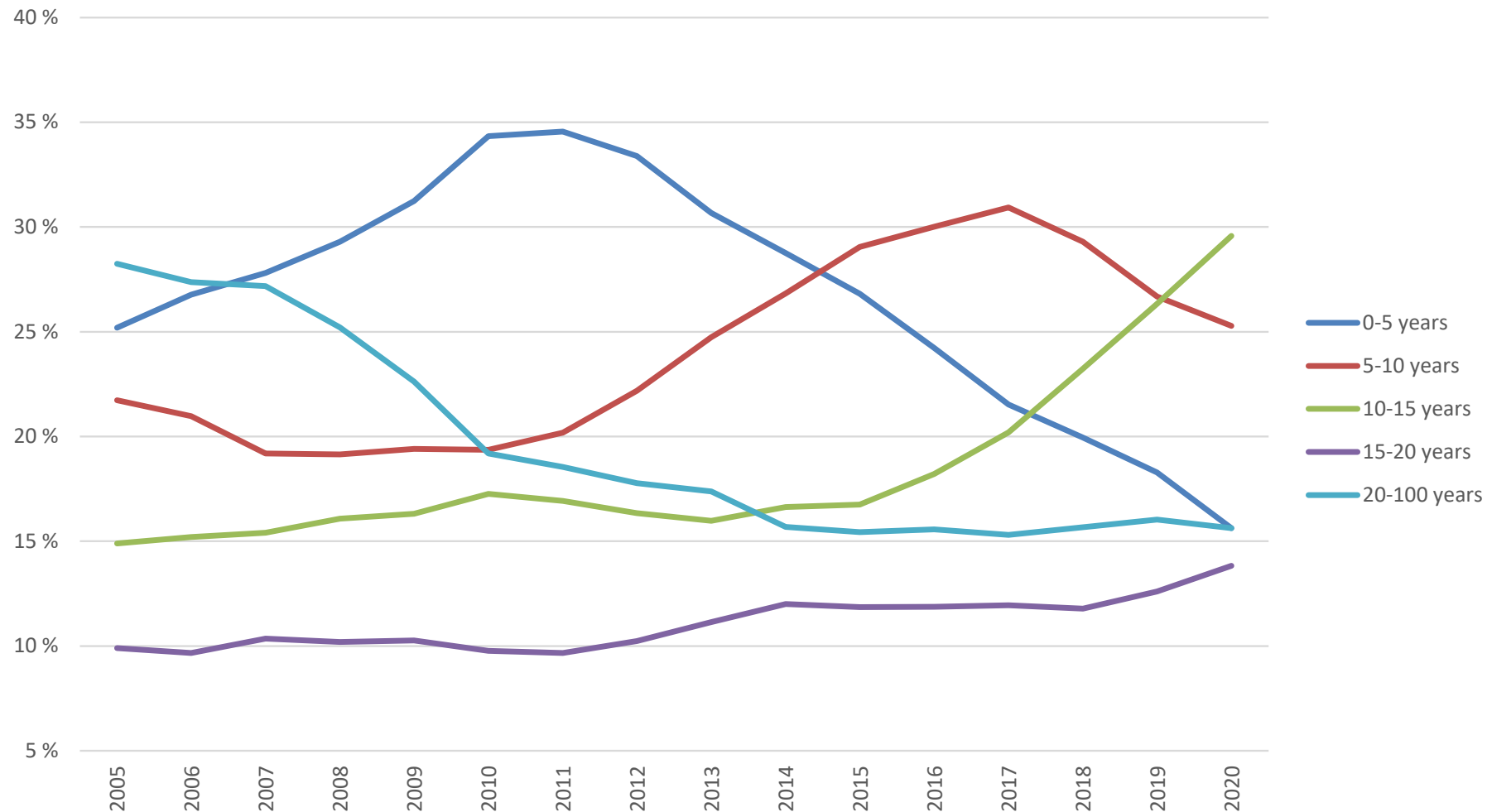
Cancellations due to Covid-19 appear with time lag.

# NOMIS FLEET: SHARE OF NEWBUILDS AS % OF FLEET DOWN & AVERAGE FLEET AGE INCREASES



# NOMIS FLEET: AGING IN LINE WITH THE WORLD FLEET

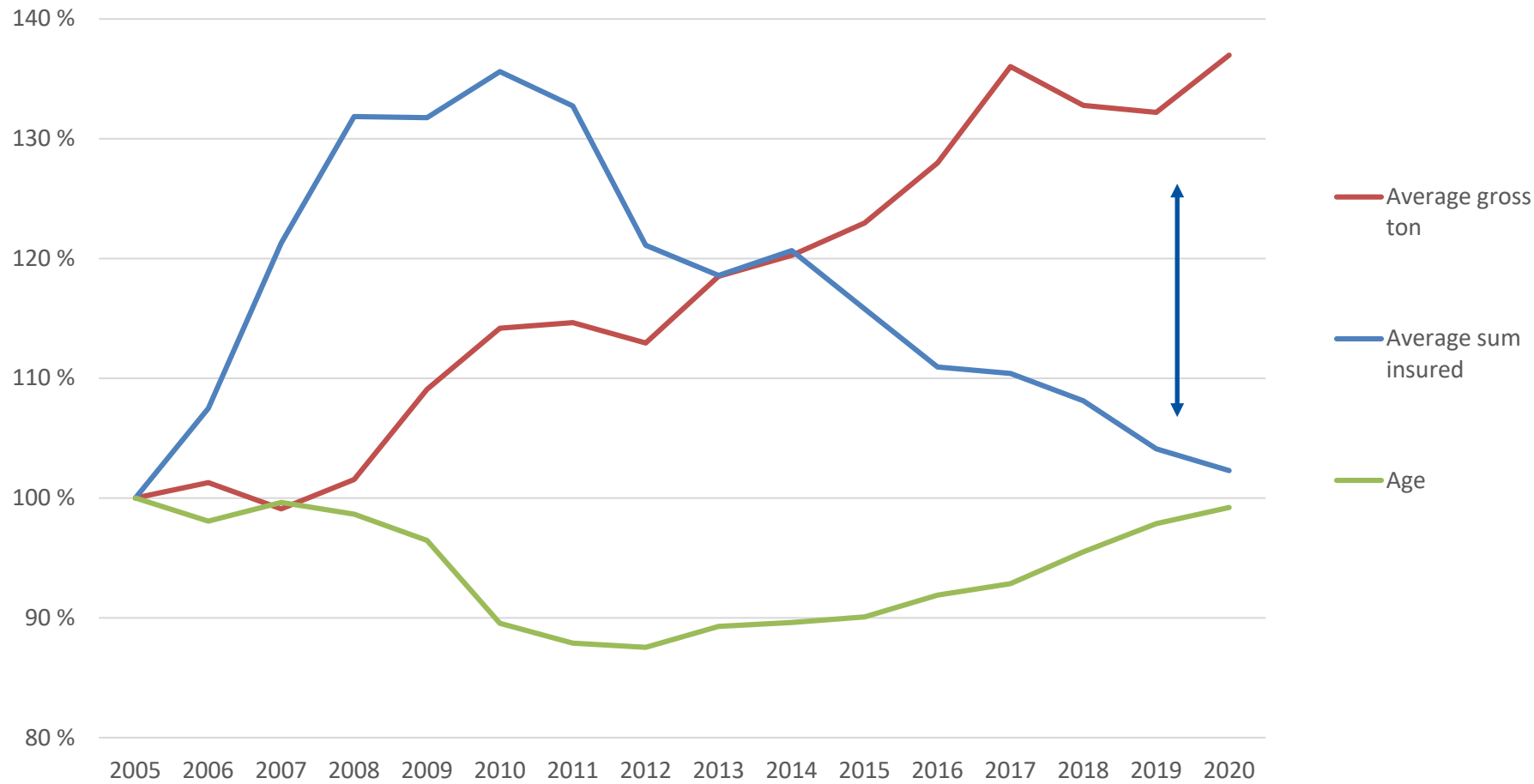
NUMBER OF VESSELS BY AGE GROUP AS % OF TOTAL FLEET





# INCREASING GAP BETWEEN VESSEL SIZE & VALUE

INDEX OF AV. VESSEL VALUES, GROSS TONS & AGE, 2005 = 100%



Average **vessels size** increasing since 2007.

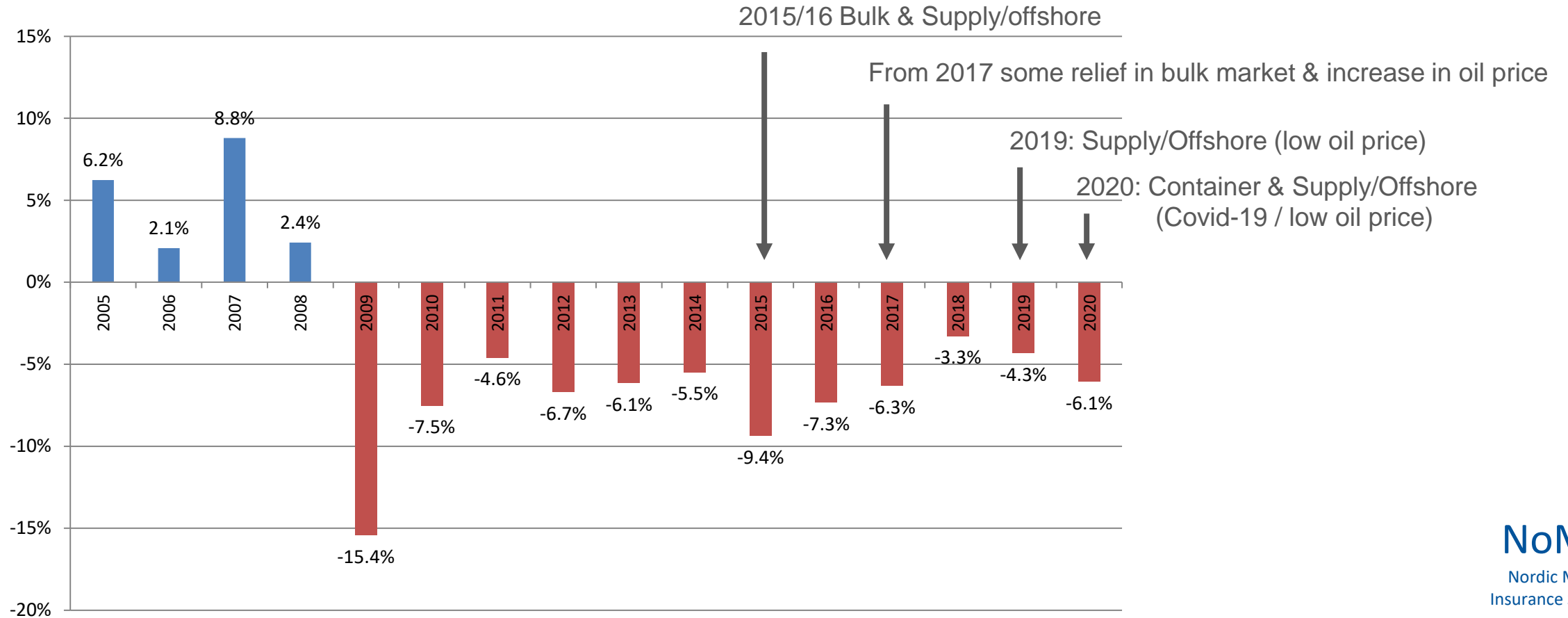
Average **vessel value** decreasing since 2010.

Instead of correlation, **adverse development** last ten years.

# ANNUAL CHANGE IN VESSEL VALUES ON RENEWAL

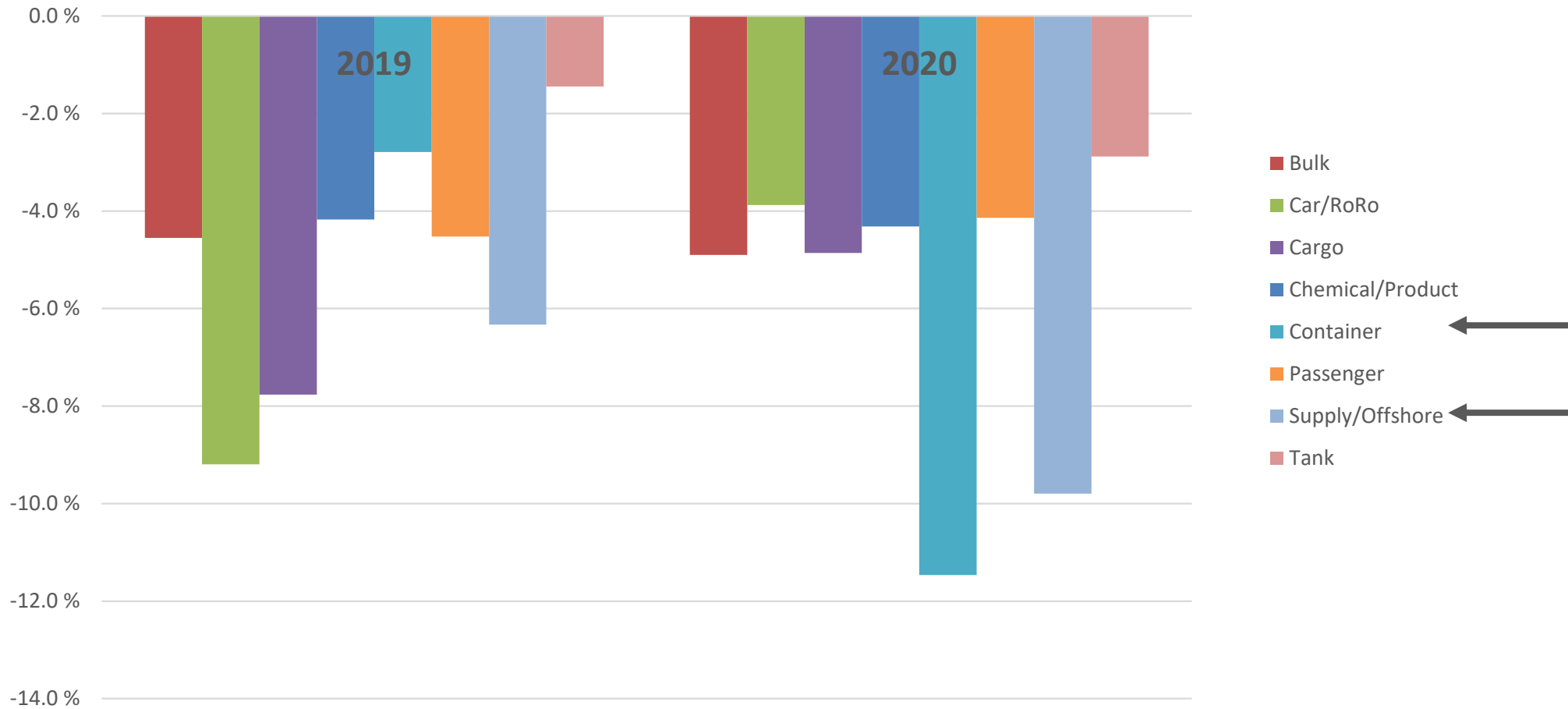
COMPARING INSURED VALUE OF SAME VESSELS IN TWO CONSECUTIVE YEARS

Main drivers of annual reduction:

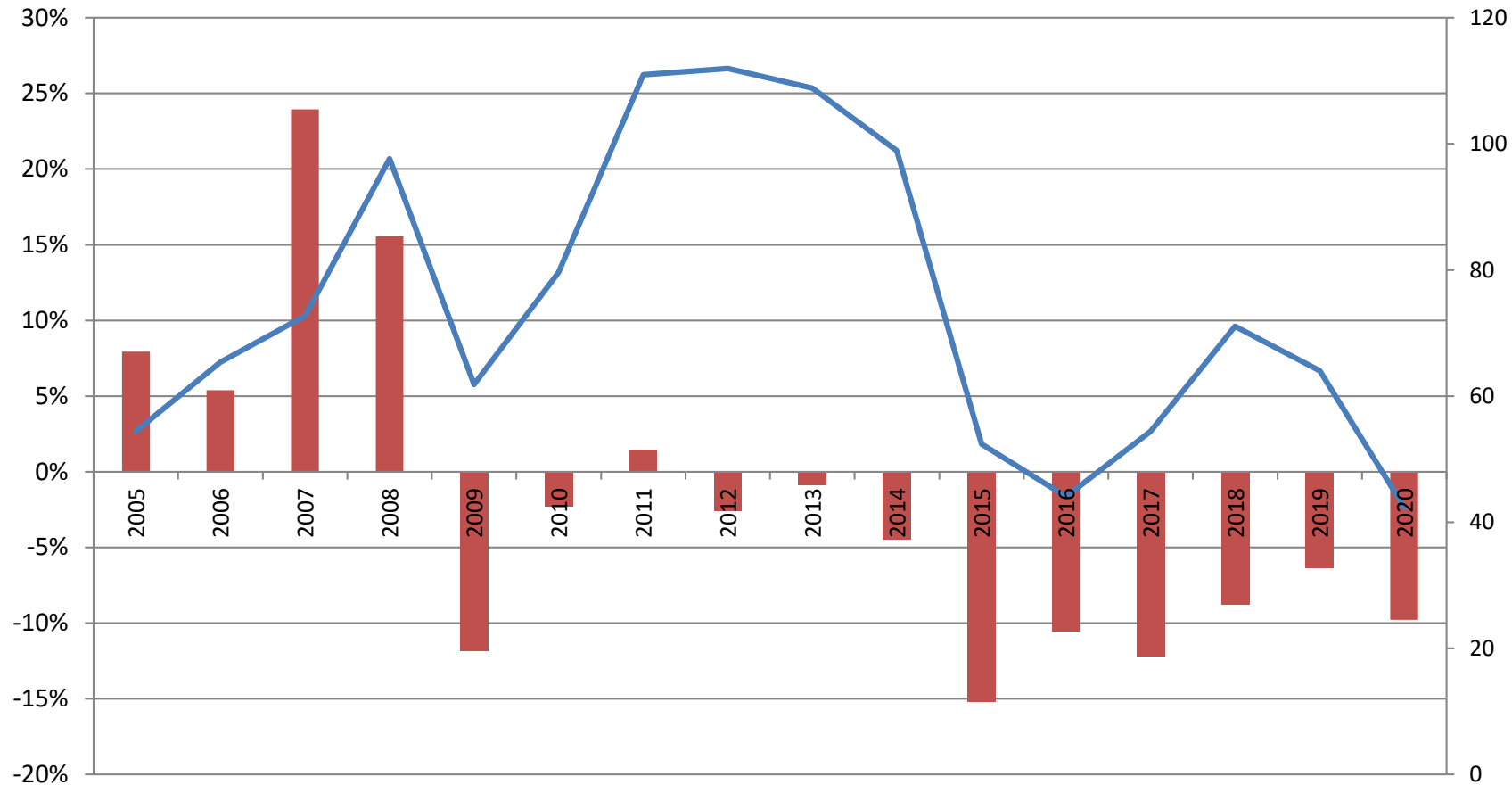


# VALUE REDUCTION IN 2020 RENEWALS DRIVEN BY CONTAINER AND SUPPLY/OFFSHORE

ANNUAL CHANGE IN VESSEL VALUES ON RENEWAL 2019, 2020 BY VESSEL TYPE



# SUPPLY/OFFSHORE: COMPARING ANNUAL CHANGE IN VESSEL VALUES ON RENEWAL TO AVERAGE OIL PRICE\*



\*Oil price: World Bank - Commodity markets: <https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Historical-Data-Monthly.xlsx>

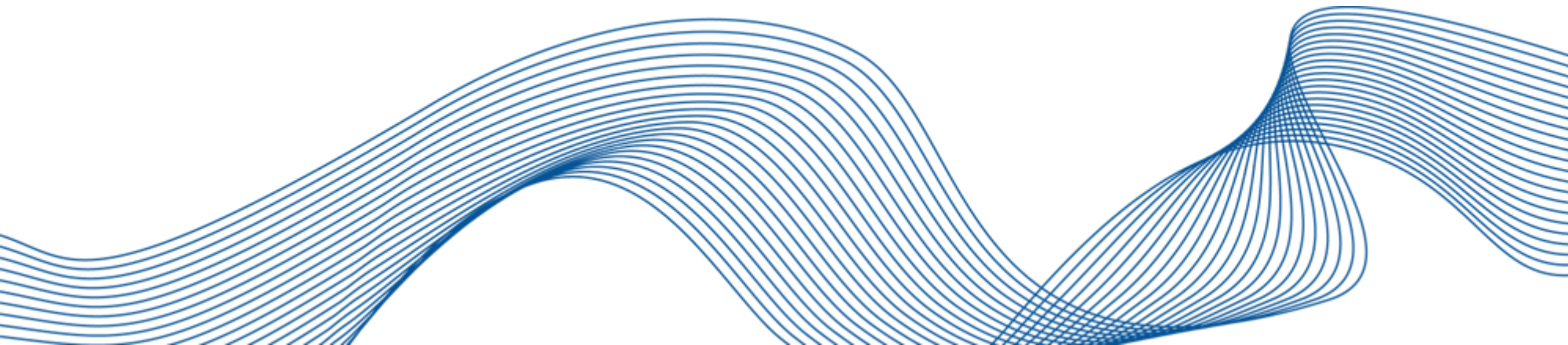
# SUMMARY WORLD FLEET & VESSEL VALUES

- Less newbuilds
- Average age of world fleet is increasing
- Newbuilds have been increasing in size, but
- Vessel values have been decreasing since 2010

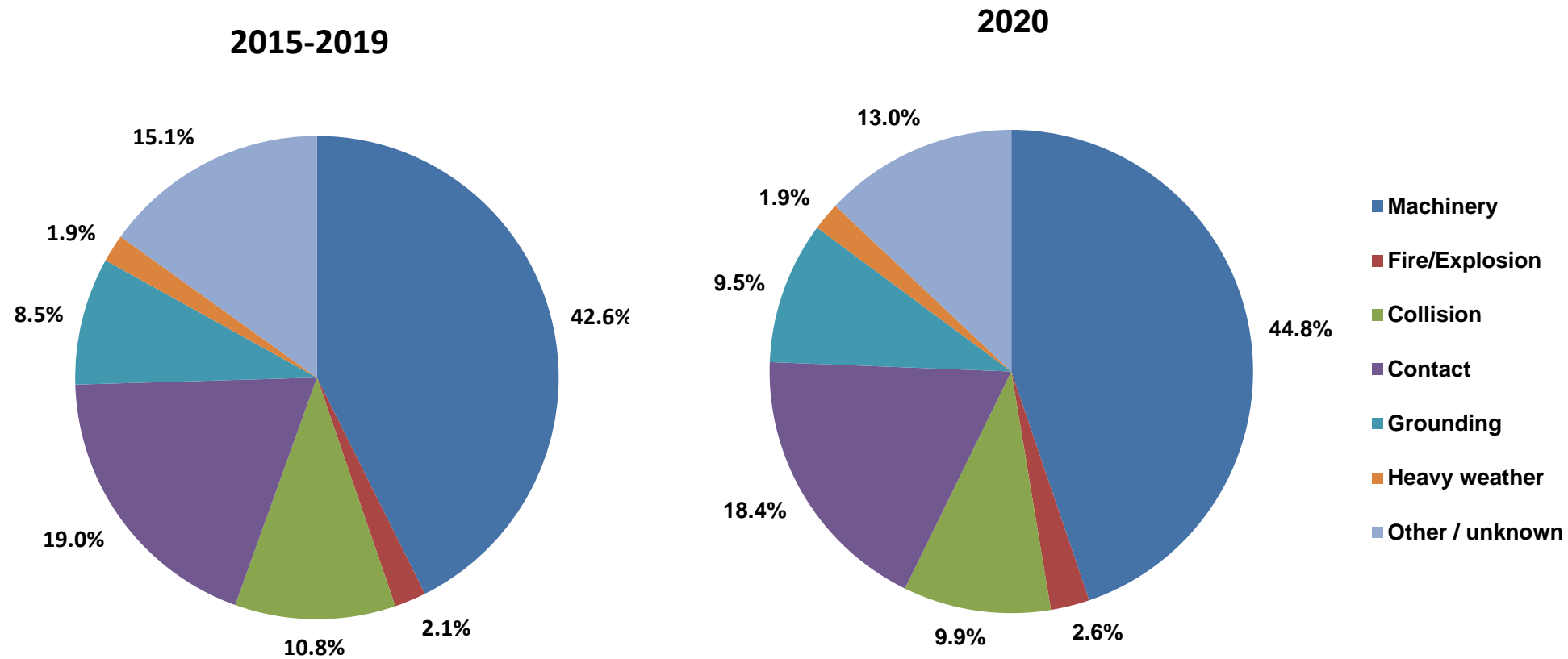
How does that impact casualty trends?

- Claims frequency and cost differ by vessel age.
- The cost of total losses is related to vessel values.  
(reduced vessel values may reduce the maximum cost of a total loss, but increase the probability of incurring a total loss under insurance).
- Larger and more complex vessels increase the probability of new record costly claims (higher repair cost, not necessary total losses).
- Larger container vessels have a higher probability of severe damage by fires

# BREAKDOWN BY TYPE OF CASUALTY



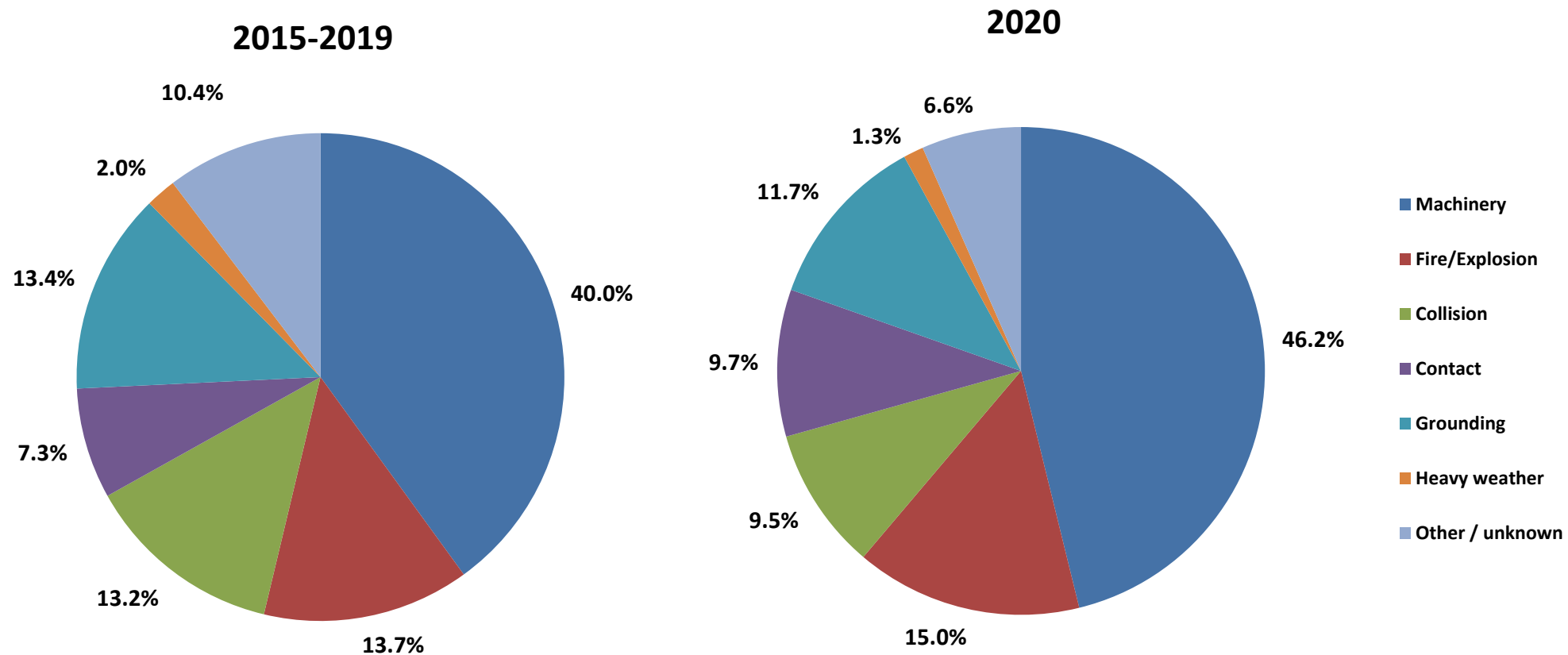
# BREAKDOWN OF NUMBER OF CLAIMS BY TYPE OF CASUALTY



Total number of claims:  
 2015-2019: 18,016      2020: 3,191

# BREAKDOWN OF CLAIMS COST BY TYPE OF CASUALTY

Fires/explosions strong impact on cost.



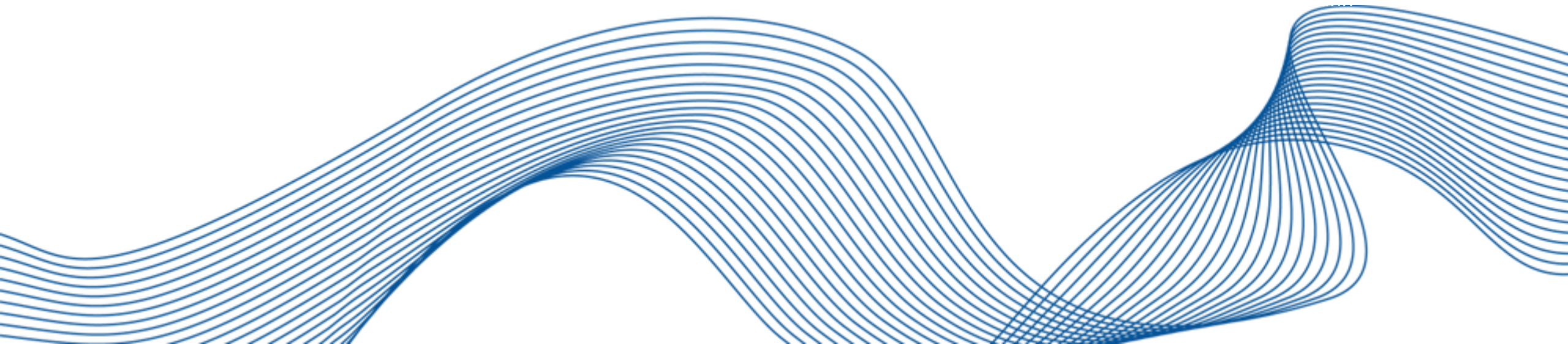
Total cost of claims in USD million:

2015-2019: 5,015.9

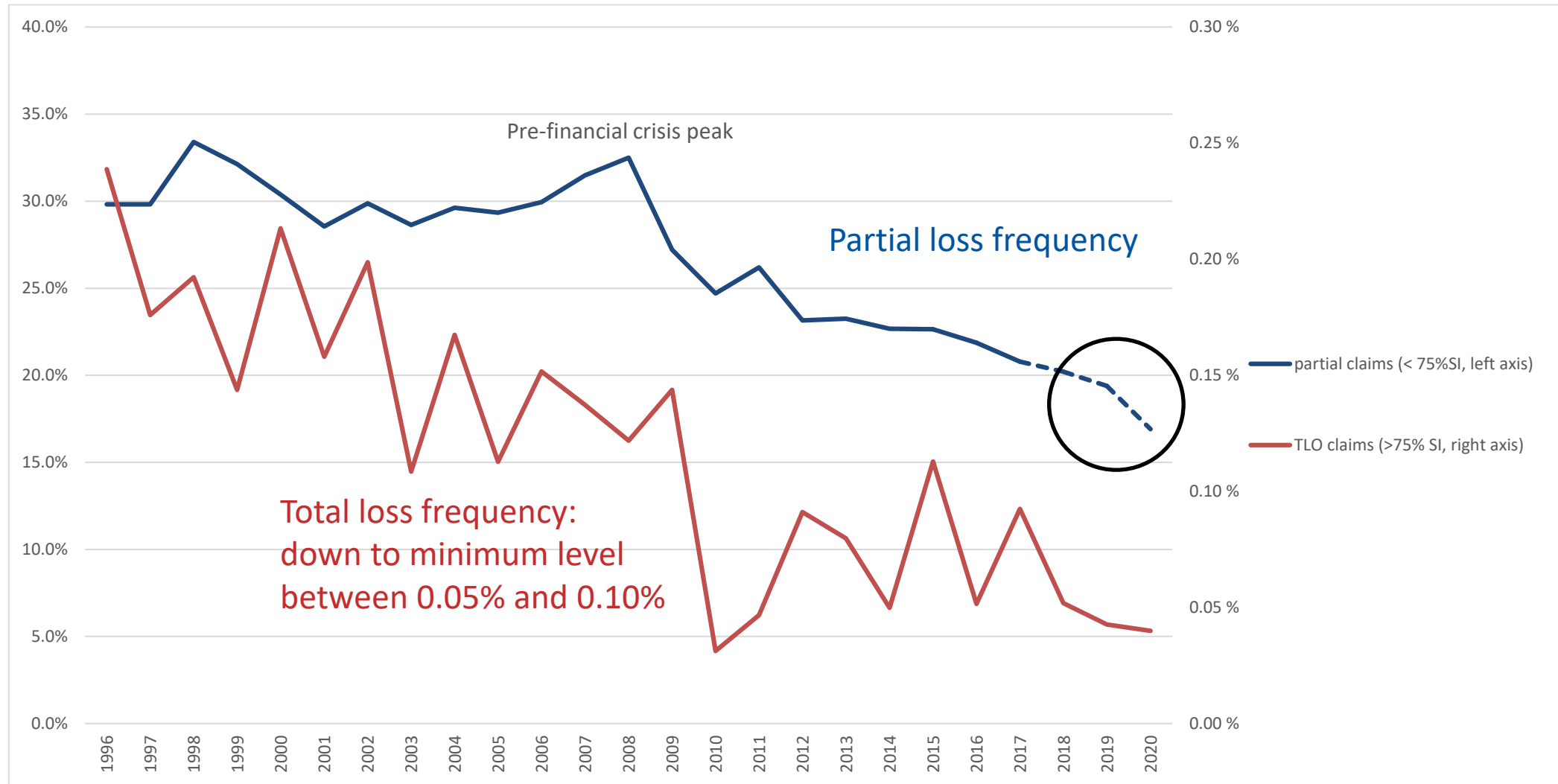
2020: 782.1



# CLAIMS FREQUENCY TRENDS

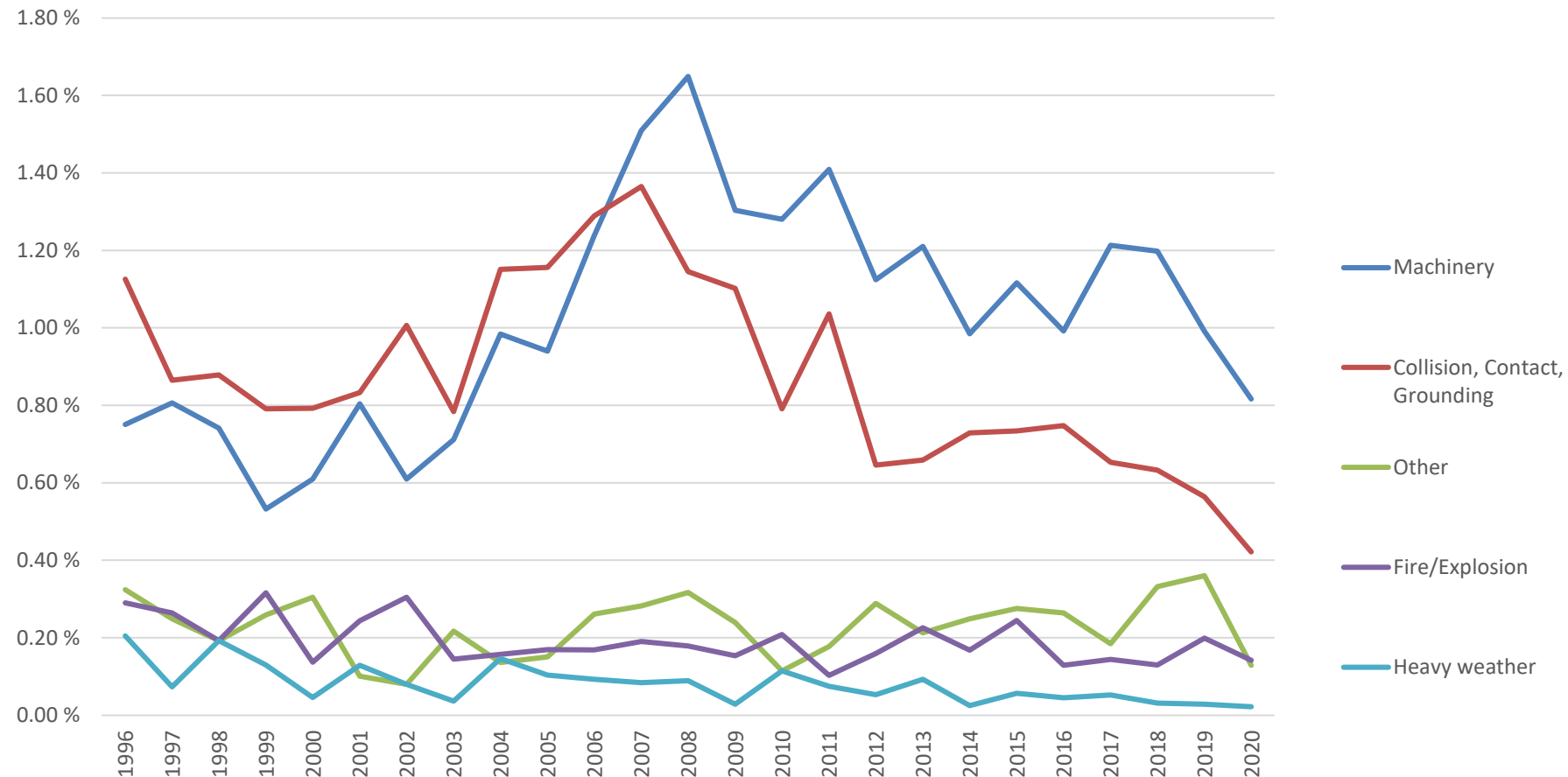


# CLAIMS FREQUENCY\* – LONG-TERM POSITIVE TREND IRREGULAR DROP IN 2020

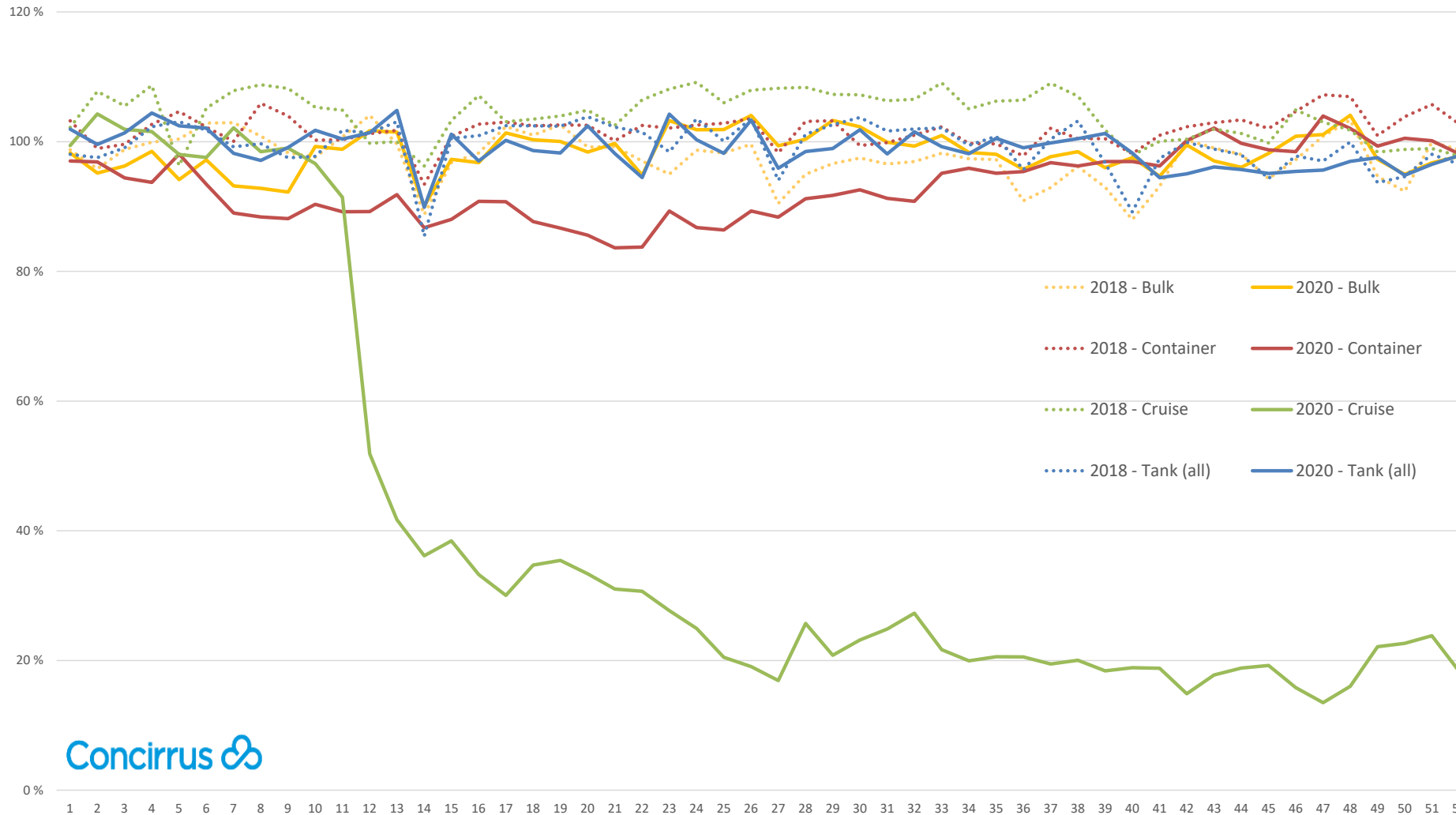


\* = Number of claims divided by number of insured vessels

# CLAIMS > USD 500,000: FURTHER REDUCTION IN FREQUENCY OF MACHINERY & NAUTICAL-RELATED CLAIMS



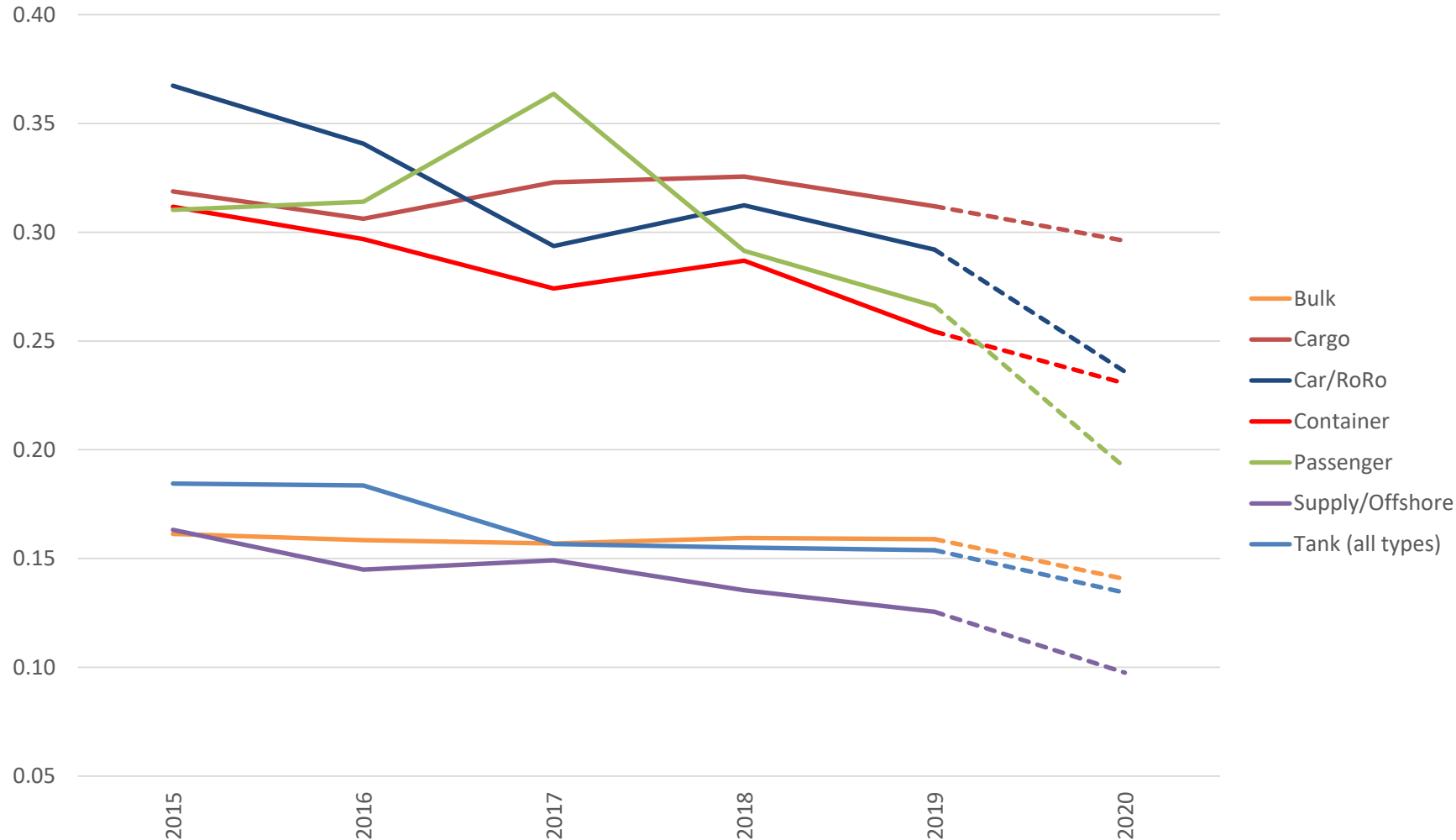
# AVERAGE MILEAGE PER WEEK BULK, CONTAINER, CRUISE, TANK (ALL TYPES), 2019=100%



2020: Container and cruise vessels show activity reduction as reaction to Covid-19.

# 2020 DROP IN CLAIMS FREQUENCY DIFFERS BY VESSEL TYPES – STRONGEST FOR PASSENGER – LEAST FOR CONTAINER!

ALL CLAIMS, INCLUDING IBNR\*

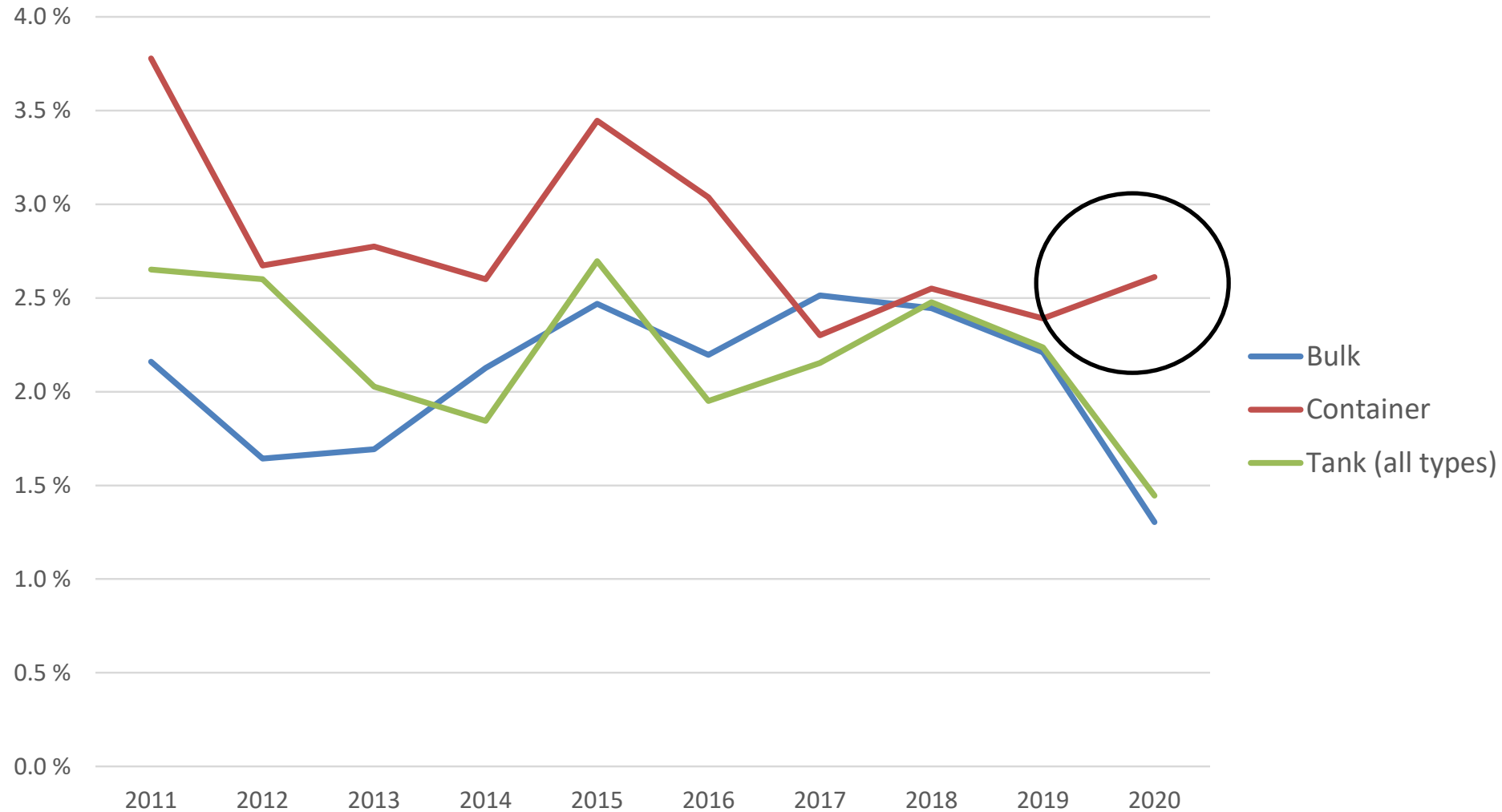


Despite activity reduction in 2020, **container** vessels show less reduction in claims frequency than vessel types with no activity reduction.

Strongest reduction:  
Car/RoRo  
Passenger  
Supply/offshore

\* IBNR = Incurred but not reported = reserve for claims adjustments and registration backlog

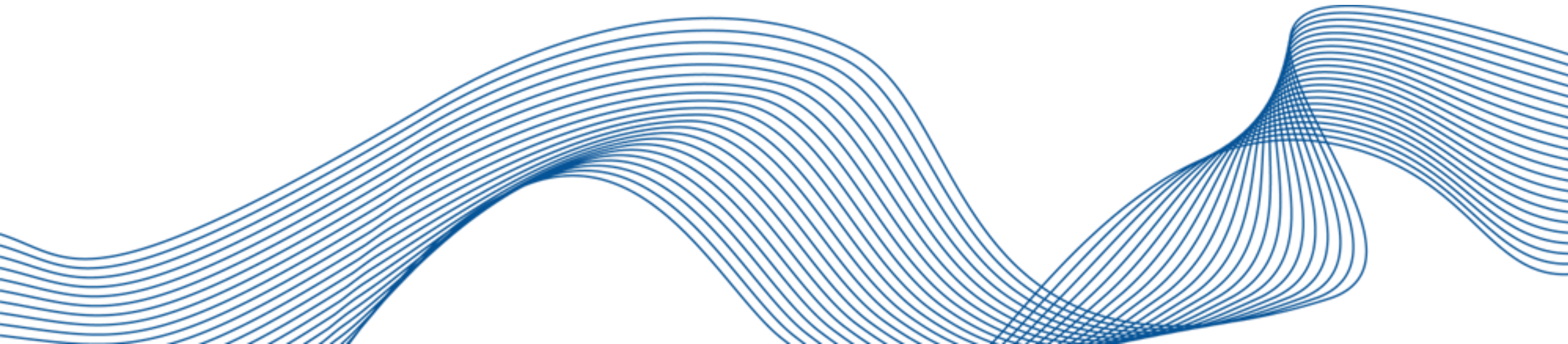
# CLAIMS > 500,000 USD – BULK, CONTAINER, TANK DECREASE IN 2020 BUT EXCEPT CONTAINER!



# CLAIM COST TRENDS

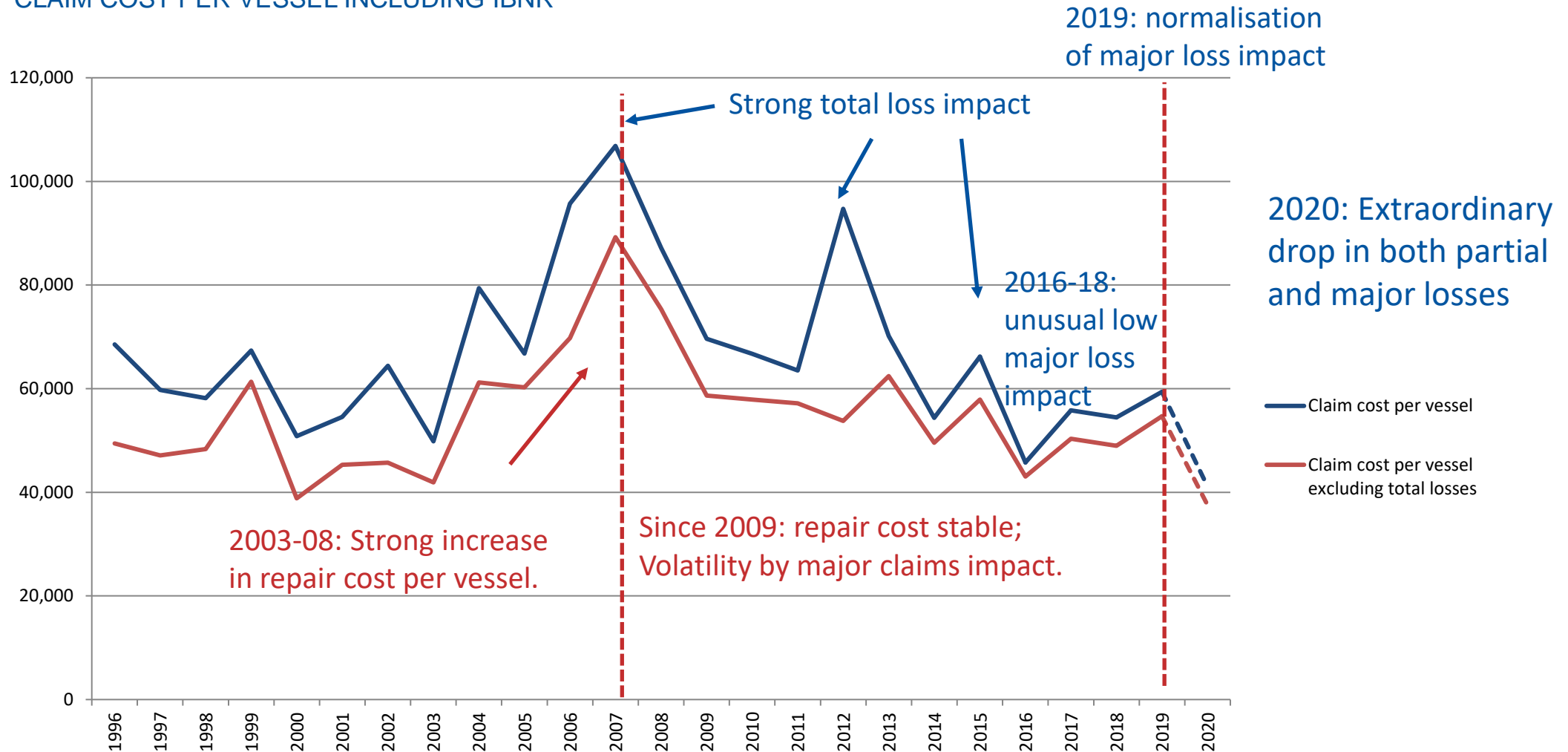


Photo: Astrid Seltmann



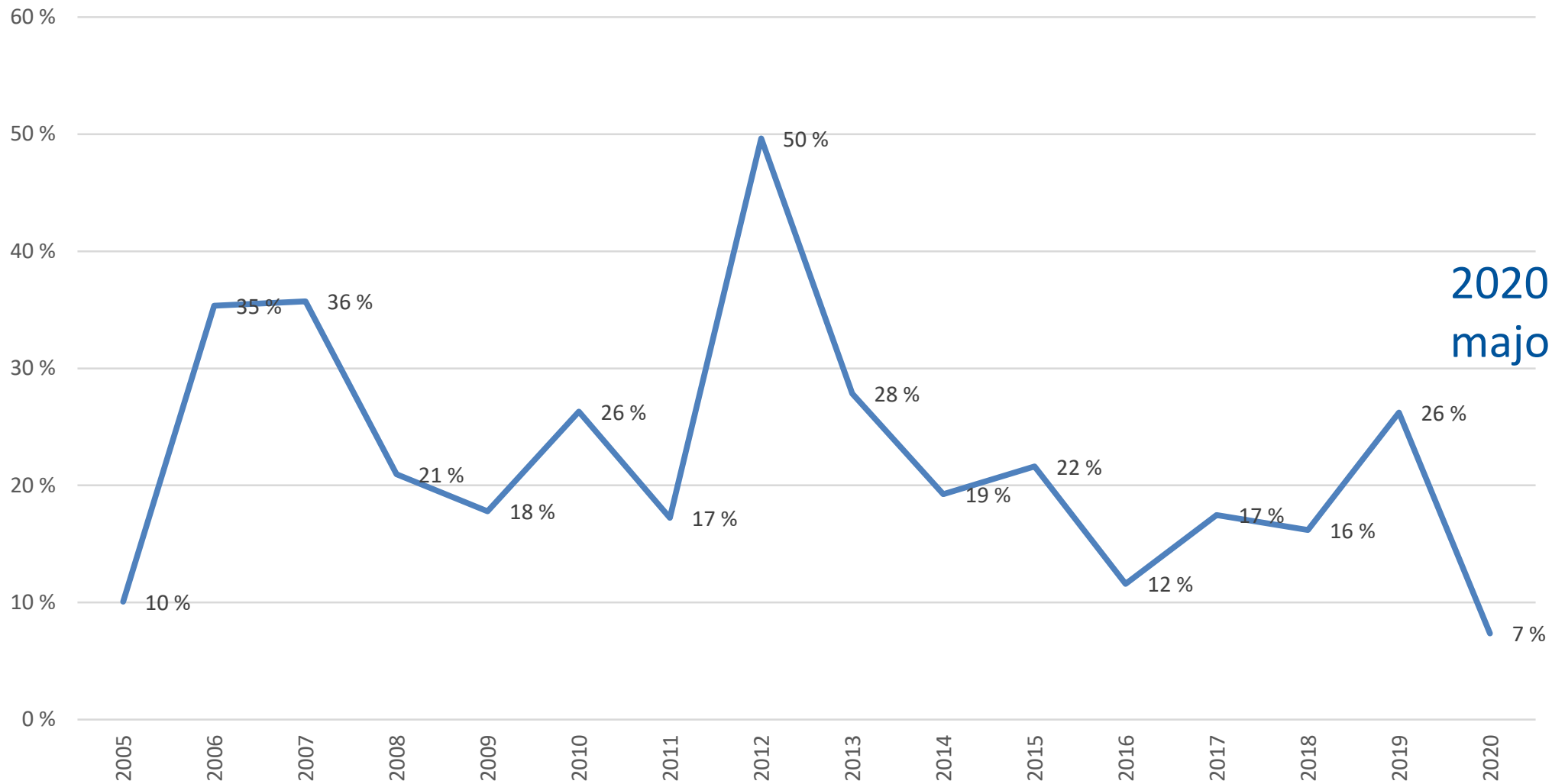
# CLAIM COST PER VESSEL SUBSTANTIALLY REDUCED IN 2020 BOTH MAJOR AND PARTIAL LOSSES

CLAIM COST PER VESSEL INCLUDING IBNR





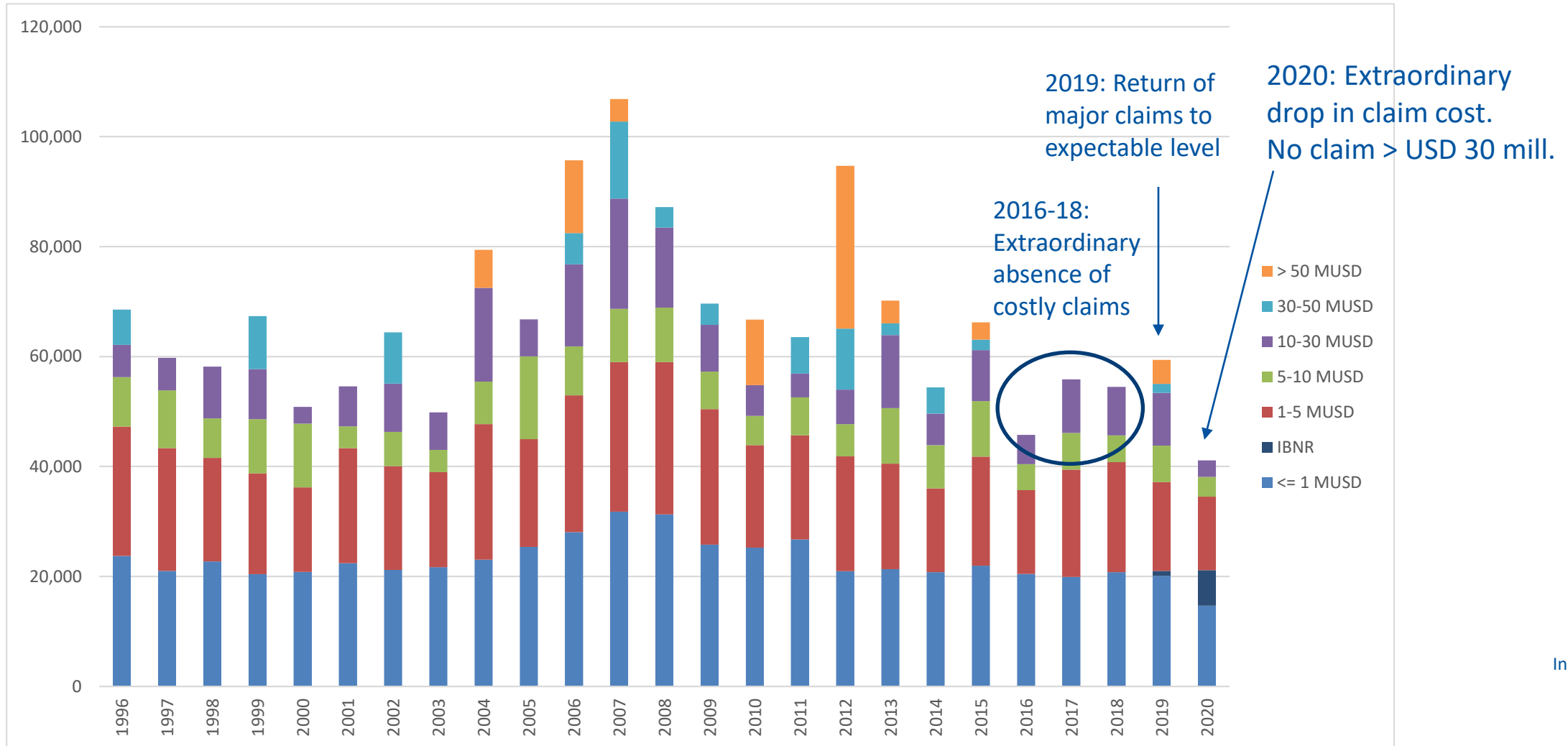
# CLAIMS > USD 10 MILLION IN % OF TOTAL CLAIMS COST\*



2020: record-low major loss impact

# 2020: EXTRAORDINARY DROP IN CLAIM COST PER VESSEL

CLAIM COST PER VESSEL INCL. IBNR, CLAIMS IN BANDS OF CLAIM SIZE



# SUMMARY CASUALTY TRENDS – FREQUENCY

- **Total loss frequency**
  - Long-term positive trend
  - Stabilizing around the probably minimum achievable level.
  - Hopefully positive effect of increased focus on safety measures
- **Overall claims frequency**
  - Long-term positive trend, unusual drop in 2020.
- **Major loss frequency (costly casualties)**
  - 2020: unusual absence of major losses
- **Influencing factors**
  - Vessel utilization (type of trade, overcapacity, maintenance, lay-ups, activity in ports /congested areas)
  - Vessel age and size
  - Changes in underlying risk
  - Insurer deductibles (higher deductibles = less claims reported)
  - Cost of repairs and exchange rates (repairs often paid in other currencies than USD)

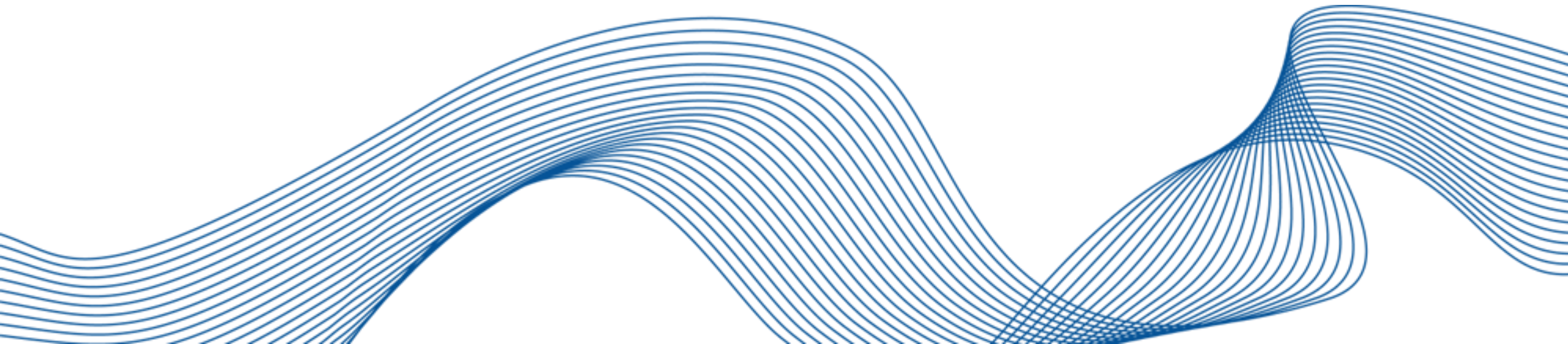
# SUMMARY CASUALTY TRENDS – COST

- **Major losses (= costly casualties)**
  - Unusual low impact in 2020
  - Increasing volatility in recent years (random occurrence in any one year),
  - Increasing cost of single casualties (increasing vessel sizes, more complex high-value objects)
  - In general strong influence on the cost also in years with few major losses
- **Claim cost per vessel / repair cost:**
  - Stabilization at modest level in recent years.
  - Also unusual reduction in 2020.
- **Cost drivers**
  - Steel price, USD exchange rate impacts statistics (repairs often paid in other currencies than USD), Labour cost, Maintenance routines, ...

# CLAIMS FREQUENCY VERSUS VESSEL SPEED



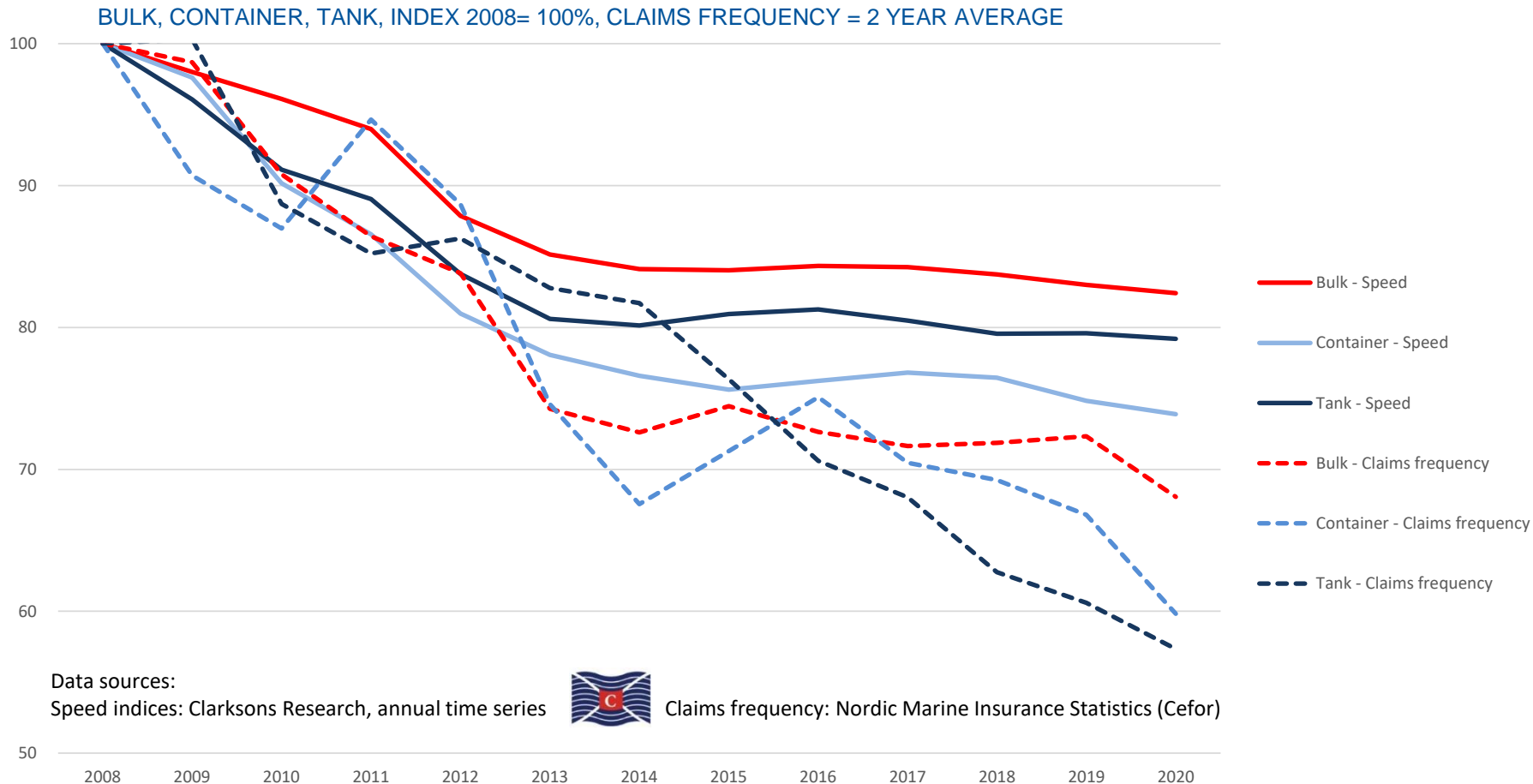
Photo: Cefor Annual Report 2020



# SLOW STEAMING EFFECT? (BULK, CONTAINER, TANK) CLAIMS FREQUENCY & AVERAGE VESSEL SPEED

PARALLEL REDUCTION SINCE 2008

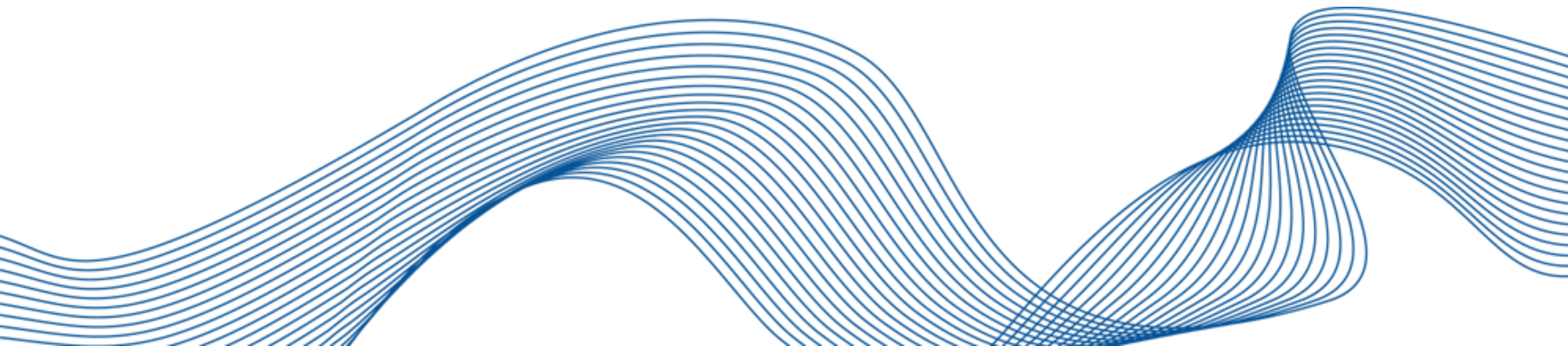
BUT FLATTENS OUT FOR SPEED WHILE CLAIMS FREQUENCY REDUCTION ACCELERATES;



The parallel development is no proof of a causal relation, but a strong indicator of a possible correlation between vessel speed and claims frequency.

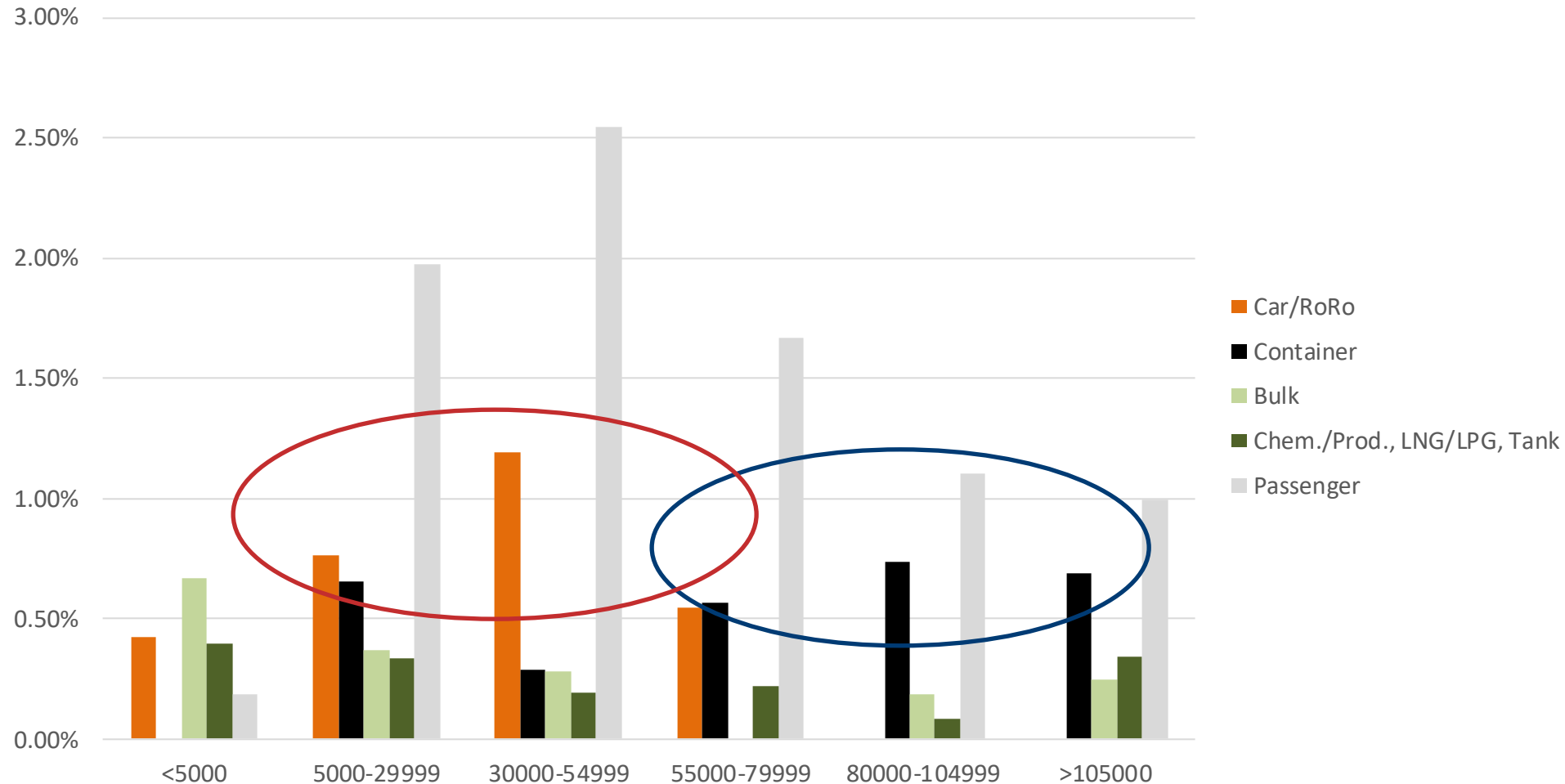
Various factors influence claims frequency, speed cannot explain recent decrease alone.

# FIRES – NO ALL-CLEAR SIGNAL



# HIGHEST FIRE FREQUENCY (CARGO VESSELS): MEDIUM-SIZED CAR/RORO AND LARGE CONTAINER VESSELS

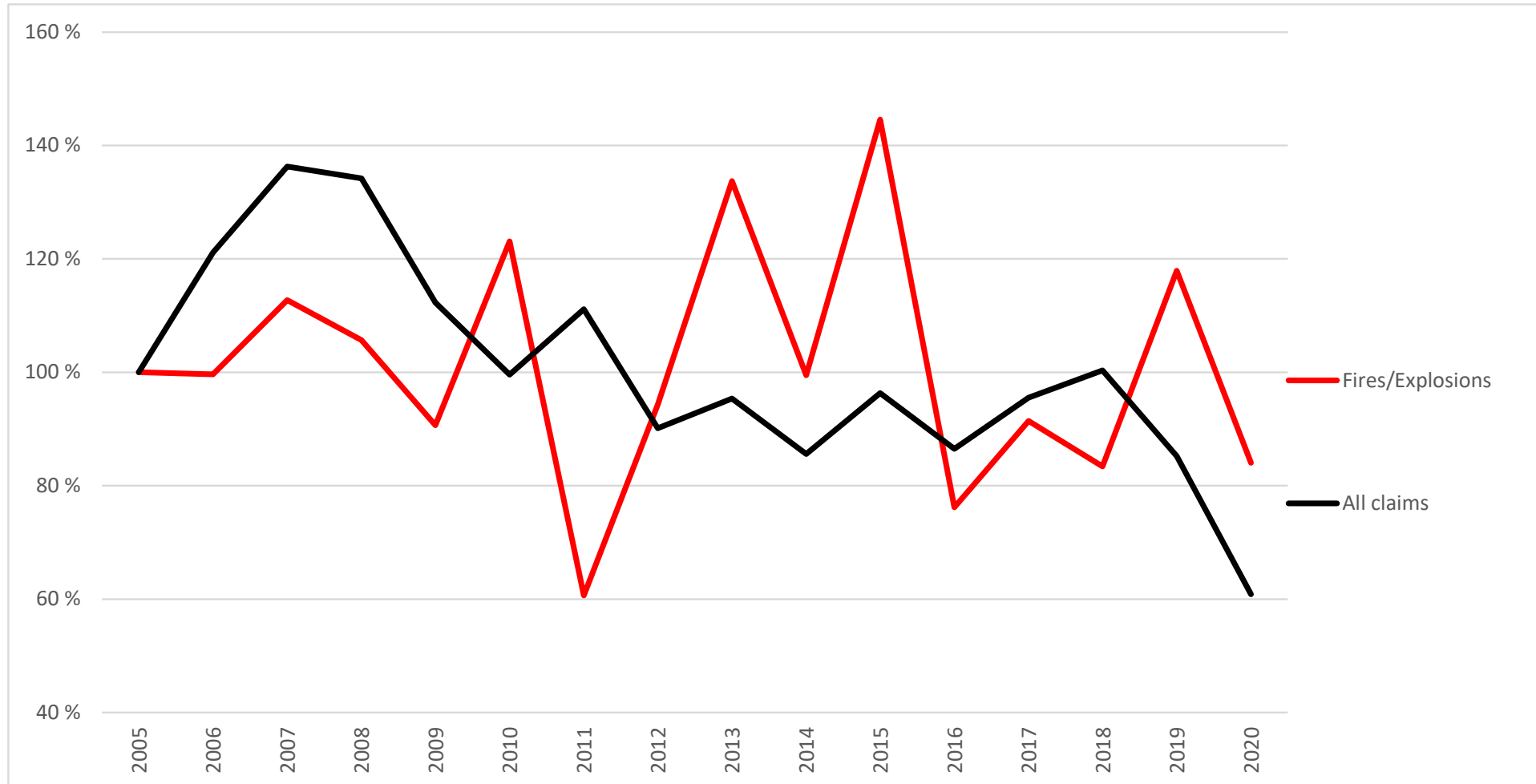
FIRE FREQUENCY BY VESSEL TYPE AND SIZE BANDS (GROSS TONS), 2010-2019





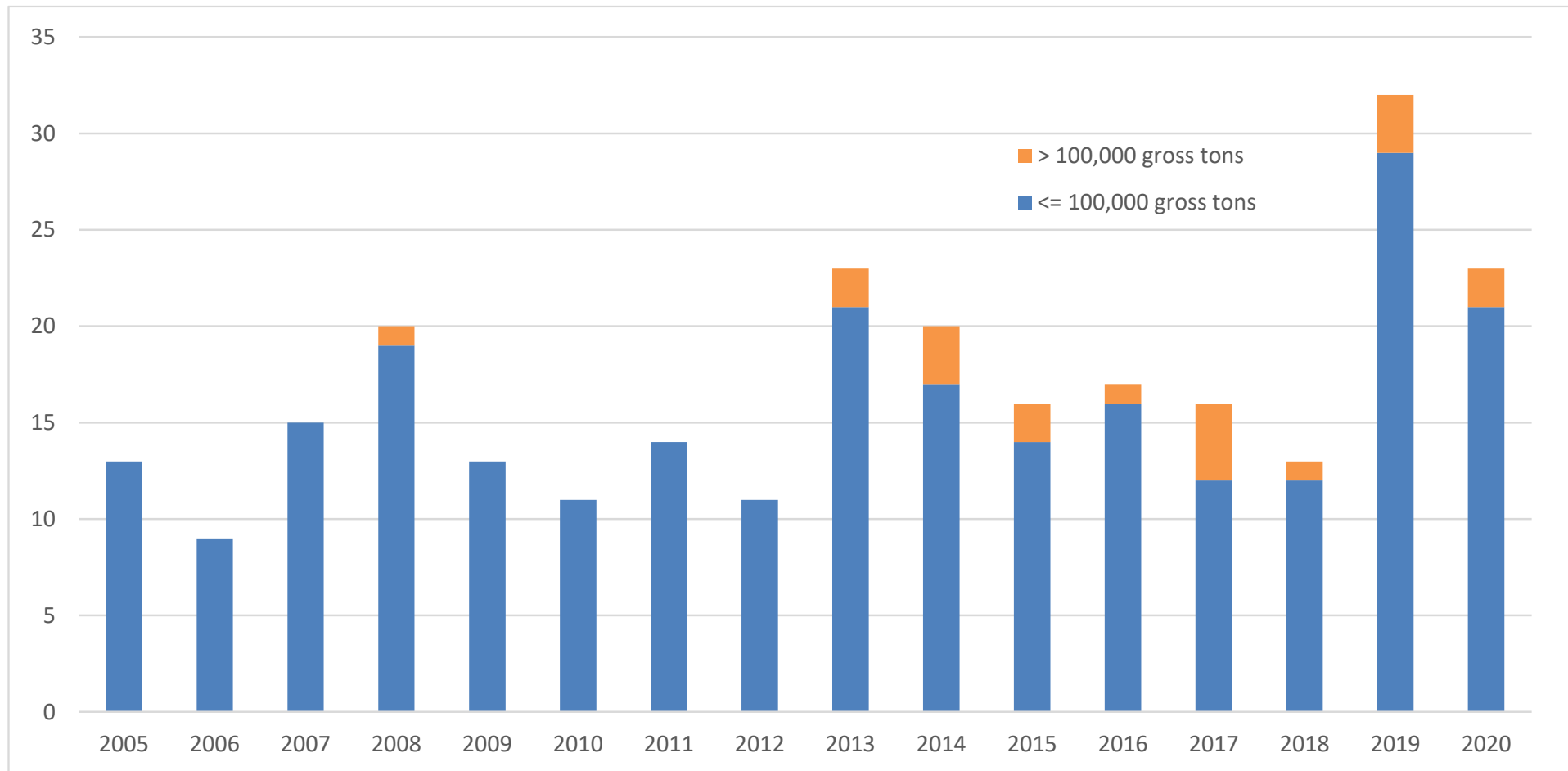
# FIRE FREQUENCY (ALL VESSEL TYPES): NO DOWNWARD TREND AS FOR OTHER CASUALTY TYPES

CLAIMS FREQUENCY OF ALL CLAIMS VERSUS FIRES/EXPLOSIONS, CLAIMS > USD 500,000

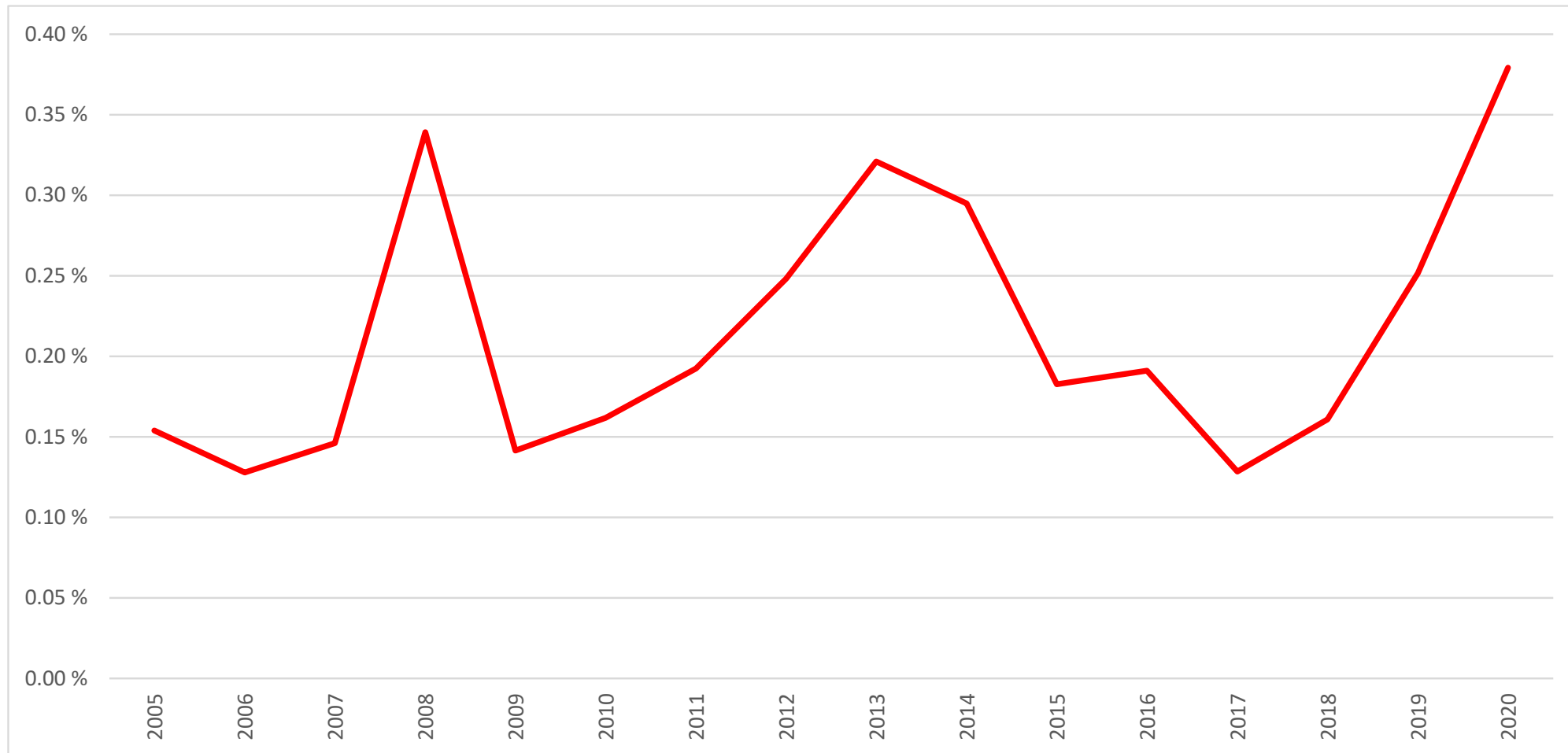


# CONTAINER VESSELS: INCREASING NUMBER OF FIRES ON LARGE VESSELS

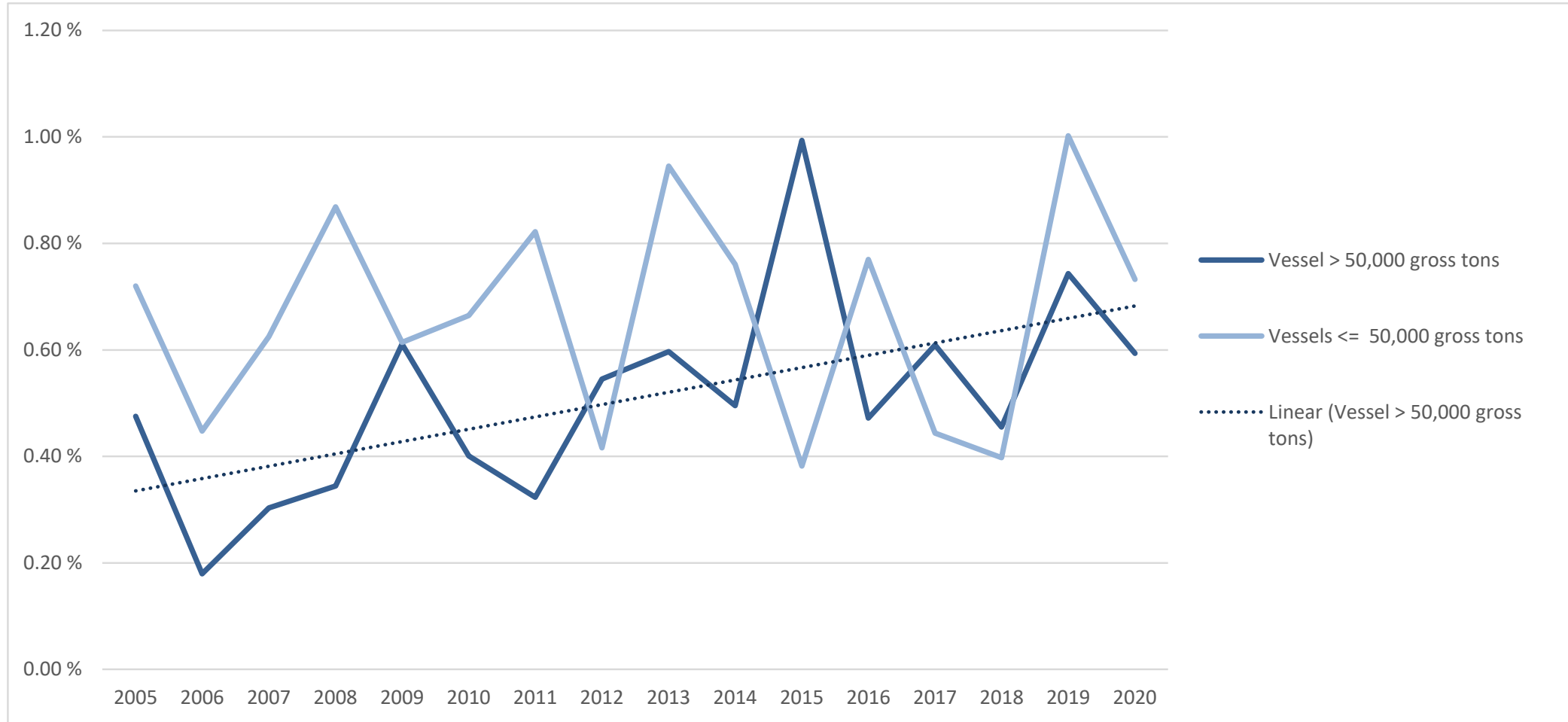
(NB: SOME RELATION TO INCREASING NUMBER OF LARGE CONTAINER VESSELS IN WORLD FLEET)



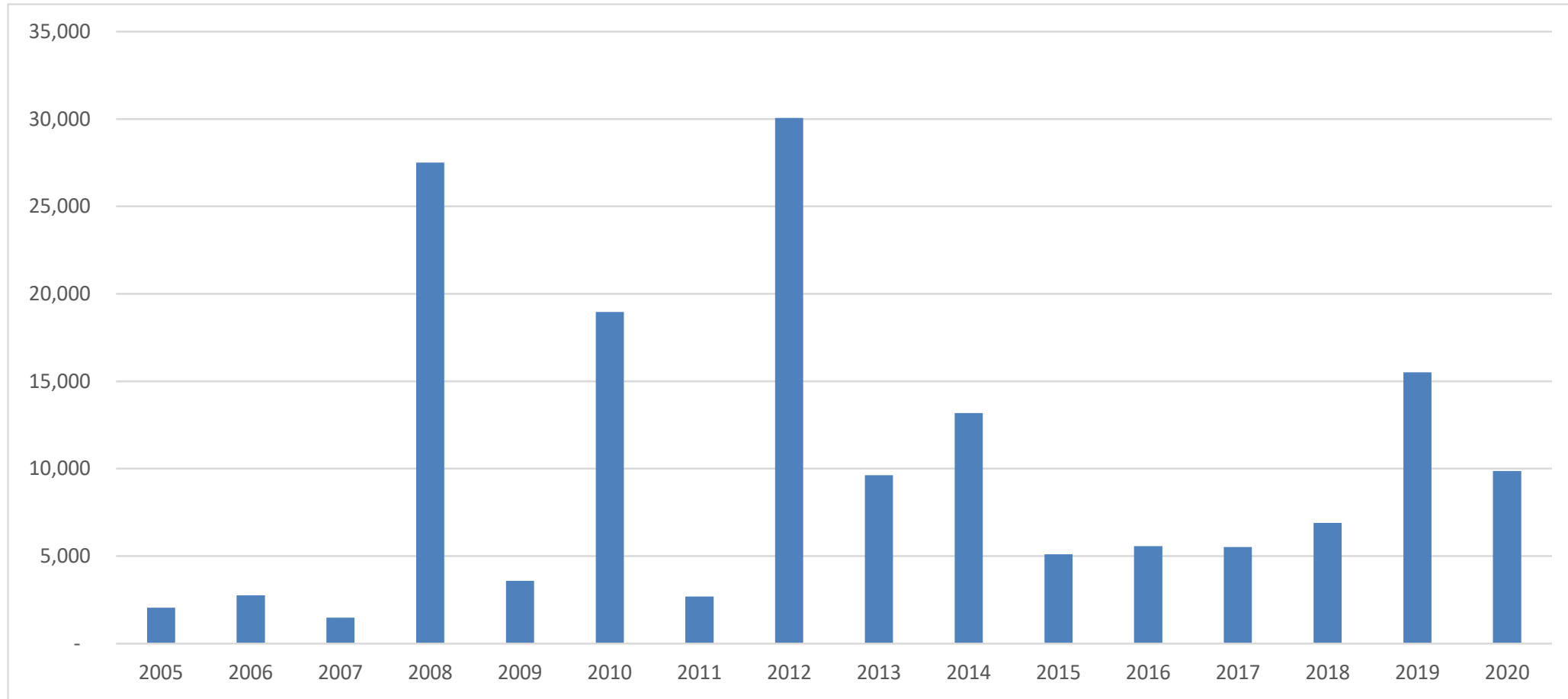
# CONTAINER VESSELS: STRONG INCREASE IN FREQUENCY OF FIRES > USD 500,000



# CONTAINER VESSELS: UPWARD TREND IN FIRE FREQUENCY ON LARGER VESSELS



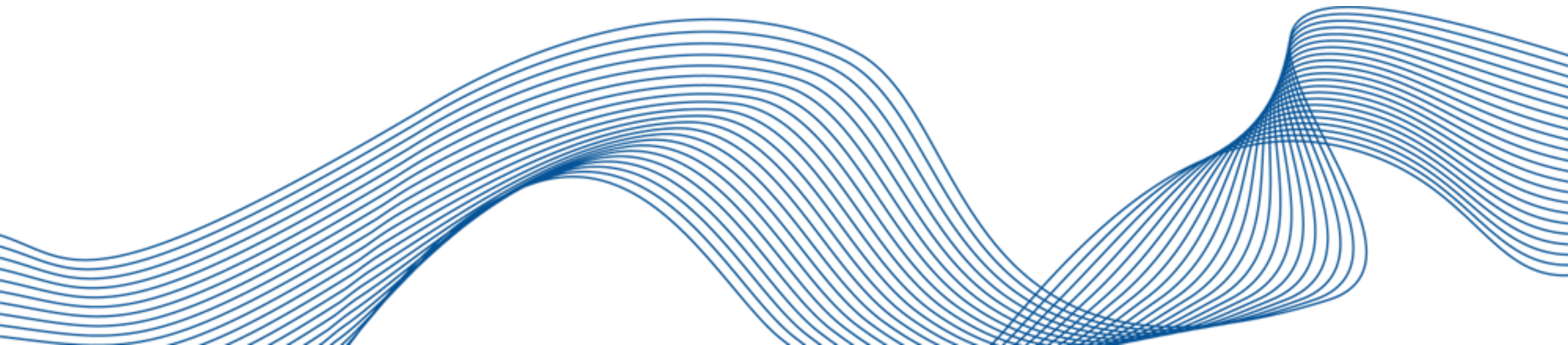
# ALL FIRES/EXPLOSIONS – CLAIM COST PER VESSEL (USD)



# SUMMARY FIRES

- Fire frequency (all vessel types): No downward trend as for other types of casualties.
- Highest fire frequency on
  - Passenger vessels
  - Medium-sized Car carriers / RoRo vessels (NB: there are few large Car/RoRo vessels)
  - Large container vessels
- Container-carrying vessels:
  - Upward trend in fire frequency on large container vessels.
  - In recent years strong impact on cost by fires starting in cargo area (in a container).
  - The probability of a fire in the cargo area increases with the size of the container vessel: The more containers on board, the higher the probability that at least one container contains dangerous cargo that may self-ignite.
  - In 2020 continued strong impact by fires on container vessels (although most in engine room). This is contrary to the 2020 trend for other casualty types or vessel segments.

# SUMMING UP & OUTLOOK



# MAIN TAKE-AWAYS

- Vessel segments reacted differently to Covid-19.
- Substantial reduction in overall claims frequency and cost – to be seen in connection with reduced activity level in some segments (Cruise, container).
- Impact of major losses at lowest level since 2005.
- Potential for
  - increased single claim cost  
(delays in spare part delivery, availability of crucial personnel, crew fatigue)
  - unprecedented event losses (cruise vessel accumulation)  
did not materialize (yet) to a larger degree.

## Exceptions:

- Fires/explosion do not show a reduction as other casualty types.
- Container vessels: No reduction in large losses. Fires especially prevalent.

NB: LOH, P&I, cargo not part of NoMIS analysis. These lines were more affected by Covid-19 (delays, crew, passengers).



# THE 2021 ORACLE

Photo: Astrid Seltmann



Not one unique trend.

Various influences with both positive and negative impact.

Next Cefor hull trend update to be issued end of August 2021.

Projects for 2021 analyses:

- Geodata  
(sustainability, hot spots, areas with changed risk)
- Fires revisited
- Monitor how market changes may induce changes in risk (fuel, remote techniques, new technology,...).

# OCEAN HULL TRENDS PUBLISHED BY CEFOR 7 APRIL 2021

AS PRESENTED IN THIS WEBINAR



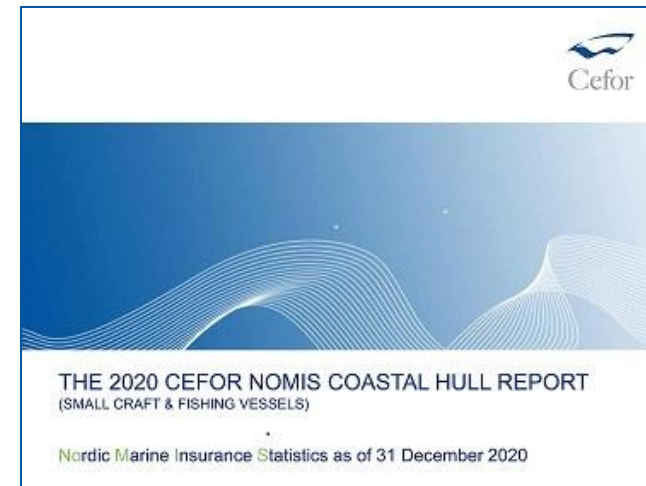
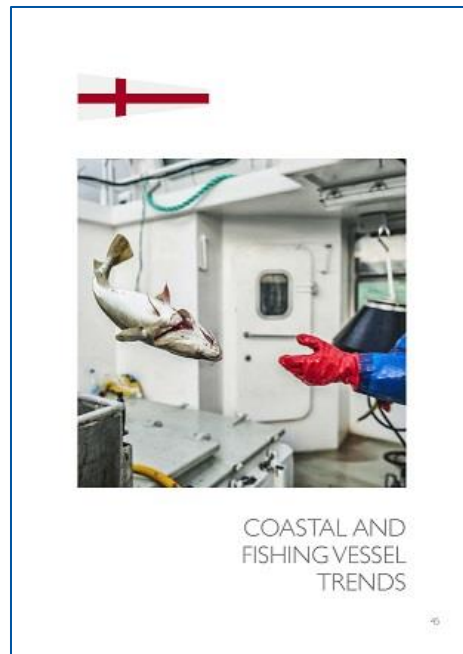
**NoMIS**  
Nordic Marine  
Insurance Statistics



# COASTAL HULL TRENDS PUBLISHED BY CEFOR 7 APRIL 2021

NOT PRESENTED IN THIS WEBINAR

FLEET & CASUALTY TRENDS OF THE NORDIC COASTAL PORTFOLIO AND FISHING VESSELS IN PARTICULAR:



NoMIS  
Nordic Marine  
Insurance Statistics



# NOMIS HULL TRENDS @ [STATISTICS \(CEFORS.NO\)](https://statistics.cefors.no)

**NoMIS - as of 31 December 2020**  
**2020: Claims impact reduced but fires prevail**

The main trends in 2020 were

- Substantial reduction in overall claims frequency and cost
- Impact of major claims at lowest level since 2005.
- Vessel segments reacted differently to Covid-19
- No reduction in large loss frequency for container vessels
- Fires especially prevalent

Besides the standard hull trends for claims frequency, severity and vessel values, Cefor turned this year the spotlight on the following with in-depth analysis:

- Covid-19 impact on hull trends
- Fires - No all-clear signal
- Claims frequency versus vessel speed (bulk, container, tank)

In addition, detailed NoMIS reports for ocean and coastal hull business provide breakdowns of claims trends by vessel type, age group, size group, insured value bands and other subgroups. The trends are illustrated by key figures such as claims frequency and claim cost by vessel and the average cost per casualty. Also exposure curves for ocean hull business are made available.

[2020 Cefor Annual Report](#)  
[2020 Underlying figures Cefor Annual Report \(graphs in annual report\)](#) (Ocean hull figures in USD; Coastal hull figures in NOK)  
[Press release](#)  
[2020 Cefor NoMIS Ocean Hull Report](#)  
[2020 Exposure curves \(Ocean hull\)](#)  
[2020 Cefor NoMIS Coastal Hull Report](#)

**NoMIS trends per Dec. 2020:**  
<https://cefors.no/statistics/nomis/2020/nomis---as-of-december-2020/>

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**Special focus analyses:**  
<https://cefors.no/statistics/nomis/2020/nomis---as-of-december-2020/>

THANK YOU!

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